The Archaeology and Site History of 75 State Street

THE ARCHAEOLOGY AND SITE HISTORY

OF

75 STATE STREET

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ACKNOWLEDGMENTS

This project, like all such projects, is the work of many individuals and organizations. Without the close cooperation between project proponents and historic preservationists, important information is lost to the preservationists and the experience of compliance is unsatisfactory to the project proponents. We believe that this project has demonstrated the rewards to all when developers and environmentalists work together toward the common goal of progress with minimum effect to cultural and natural environmental values.

This spirit must be shared by all project participants. The archaeologists in such a case must understand the goals of the developer and work to acquire important data that might otherwise be lost. Timelines archaeologists Elena Decima and Tim Kennedy brought to this project several years of experience in working on construction sites and acquired significant information about the site and its past in close cooperation with the construction team. Excavators A.A. Will and geotechnical engineers Haley & Aldrich provided invaluable information about the site and cooperated with the field crew in acquisition of field samples.

Subsurface testing and analysis of results was accomplished by our subconsultants The Public Archaeology Laboratory of Pawtuckett, Rhode Island in their usual workmanlike fashion. Guiding the field archaeologists and the other historic-preservation work on the site was the excellent site history prepared by Beth Anne Bower. This history established a framework for evaluation that allowed all team members to assess the results of their work rapidly and efficiently. Research in the later stages of the project by Sheila Charles provided valuable information and images not only for this report but for supplemental activities as well. Synthesis of several bodies of data and preparation of this material in a form accessible to the general public by Georgess McHargue helped to fulfill Timelines' goal of using the results of historic-preservation work for the public benefit as well as for meeting regulatory requirements. Cooperation and interest by Turner and Beacon Construction made everyone's job easier and more rewarding.

As always, the production of this report, with its accompanying tables, captions, headings and bibliographies, would have been impossible without the cheerful and patient assistance of Office Manager Connie Brown.

It was Dave Lash of the Beacon Companies who understood that the value of the historic-preservation component of this site was well beyond mere compliance with regulation and provided opportunities for enhancing the property rather than a threat to development goals and construction schedules. His vision has established a landmark in this type of project and demonstrates that historic preservation may be a partner in project development, rather than a tedious requirement.

MANAGEMENT SUMMARY

In 1985, Timelines performed background research and intensive archaeological survey as part of the environmental analysis for the 75 State Street project. This analysis indicated that the project area had been significantly disturbed by nineteenth- and twentieth-century cellar construction. There was the possibility, however, that significant data might still exist on the site. Using a framework for the evaluation of various classes of significant data, the excavation was monitored during construction. This monitoring continued into early spring of 1988 as the project used the up-down construction method, under which excavation of the lower parking levels continued even after topping out.

Discovered and documented as a result of this monitoring were the Contact Period shoreline, the remnants of an early well, and various components of wharfing dated throughout the Colonial Period. In addition to the discoveries, it was confirmed that the site had been massively disturbed by earlier construction-related activities, even in those areas anticipated to be relatively undisturbed such as Bang's Alley.

Additional components of the project were histories, reports, and other research focusing on specific aspects of the project area important to the project developer.

It is important to note that all cultural-resource work was satisfactorily completed without impacting the construction schedule.

Further note should be made of the fact that the project was originally called 99 State Street. All references in this final report have been changed to 75 State Street, except in a small number of graphics, developed early in the project, which could not conveniently be redrawn at this stage.

I INTRODUCTION

This report documents cultural-resource-management activities that included research, testing and monitoring by archaeologists of construction excavation for the 75 State Street project. The monitoring component resulted from an archaeological reconnaissance study followed by subsurface testing designed to evaluate the integrity of the project area as part of the environmental review process. High integrity would have led the archaeologists to conclude that undisturbed archaeological deposits might exist on the site. The lower the integrity, the more disturbed (and thus less significant) archaeological remains would be.

The conclusion of these studies was that the project area had been severely disturbed by nineteenth-century and later construction episodes on the site. Specifically, the excavation of 8- to 10-ft. cellars impacted remains of early wharfing and other structures of the Historic Period. The principal impact was from truncation of expected deposits. Identification of disturbed soil profiles in the expected undisturbed zones (Bang's Alley, the parking lot, and Doane Street) confirmed the highly disturbed nature of the site.

Despite this disturbance, it remained possible that elements of archaeological data might remain within the site. Accordingly, a scheme to evaluate the significance of any discovered remains was developed. This scheme draws on the nature of data and establishes a relative framework for evaluating discovered deposits. This scheme is repeated here in order to explain the actions taken and conclusions of the monitoring process.

It is important to understand not only the framework used in identifying and evaluating various materials, features, or sites within the project area, but why resources discovered at this site would be significant and thus justify further study.

Most of what is important in an archaeological site is the data it contains. These data may (depending on our current state of knowledge) take three separate forms:

New Data
: New data verify or falsify predictive models which are used in understanding the past for a variety of reasons, including teaching, interpretation, and resource management.

Corroborative Data
: These data reinforce models and supplement interpretations derived from a number of sources.

Comparative Data
: These data reinforce regional and national models as well as contributing to theoretical synthesis at the regional and national levels.

Using these classifications of data within a project area, it is possible to establish priorities for decision making when resources are discovered. The priorities follow the scheme outlined above in that "new data" may drastically modify current thinking and have a high priority for further study. For example, if a part of a major Contact Period site were

discovered within the project area, our current understanding about the relationships of Contact Period native groups or their response to European "invasion" might have to be modified.

While not quite as earth-shaking as new data, "corroborative data" are especially needed in the Boston area. This circumstance is due to the current inadequacy of data from many of the earlier periods for an even rudimentary understanding of the culture history of the area.

"Comparative data" generally exist only when significant amounts are available for comparison with data bases in other regions. Thus this classification is only assigned when we expect to get enough data from resources within the project area for comparison with other sources.

The monitoring component of the project was designed to confirm the extent of disturbance as well as to locate any features that might represent "new data," to confirm the predicted location of the original Boston shoreline, and to document, where possible, any elements of remaining wharves and other maritime features.

As it turned out, we encountered remains that contributed to each of the classes of data described above. The discovery, very late in the excavation of the parking levels, of a section of an early well was indeed new data. The excavation revealed the most probable location of the original shoreline and thus corroborated predictions of its location in the area. Documentation of elements of the early wharves provided comparative data for wharfing, not only on the eastern seaboard but in Britain as well. This latter exceeded our expectations for the contribution of documenting the wharves.

In addition to the archaeological monitoring, Timelines performed research into specific aspects of the project area. This research resulted in reports for the Beacon Companies describing the activities that occurred on the site and contributed to Beacon's marketing effort and included a report specifically on Oliver's Dock, an important feature of the seventeenth- and eighteenth-century waterfront that yielded significant finds of historic timbers from the site.

II PROJECT DESCRIPTION AND LOCATION

The 75 State Street Project involved the redevelopment of a 1.37-acre area in the financial district of downtown Boston. The project fronted on portions of State Street and Kilby Street, and was located on a site formerly occupied by the Kilby Street Parking Garage, a vacant lot, and several older commercial buildings in varying physical condition.

The project resulted in the creation of a 745,000-sq.-ft. office building comprised of a low-rise base structure fronting the edges of the site, and a tower element set back from street frontage. The project included approximately 25,000 sq. ft. of retail uses located primarily along Kilby and State Street and, within a ground-level great hall oriented to Merchants Row, a primary pedestrian link between the financial district and Faneuil Hall Marketplace.

Pedestrian connections established by the project reflect the area's history of through-block walkways. These connections include a link between Merchants Row and the project's great hall, and a connection between Kilby Street and Broad Street via a walkway aligned with Central Street and Exchange Place.

The project was designed to be compatible with the scale and character of development in the surrounding area. The program of planned uses was also developed to reflect the overall character of land uses in this section of the city. Streetscape improvements, designed in conjunction with the Boston Redevelopment Authority (BRA), were provided in the vicinity of the site, and Merchants Row has been physically upgraded using brick, granite, and other materials compatible with the Faneuil Hall Marketplace. The 75 State Street Project was designed in response to guidelines prepared by the BRA and Boston Society of Architects (BSA) specifically for development of this site.

A. Project Site

The 75 State Street site is in Boston's financial district within an area fronting on State Street to the north and Kilby Street to the west (Figs. II-1 and II-2). The site was bounded to the south by Kilby Place and a privately owned dead-end alleyway which ran behind buildings fronting on Water Street. Kilby Place was used for access to the Kilby Street Parking Garage. The site's eastern boundary follows property lines located on the interior of the block, and does not consist of any frontage on Broad Street.

B. Area Description

The 75 State Street Project is located at the northern edge of the city's financial district, just south of Faneuil Hall Marketplace. The character of structures in the vicinity of the project site reflects the area's turn-of-the-century origins as a commercial center, as well as its subsequent development as the home of a variety of major real estate, banking and other financial institutions.

II PROJECT DESCRIPTION AND LOCATION

The site is located in an area of high-rise structures averaging approximately 40 stories and exceeding 400-450 ft. in height. These include Exchange Place, 60 State Street, and One Post Office Square, as well as the Custom House Tower. Building heights of older structures to the south and east of the project are generally in the range of 75 to 150 ft. Development in the area ranges from modern high-rise structures to a variety of older architectural styles including Romanesque, Beaux Arts, Federal and Classical Revival. Building materials consist primarily of brick and granite, with structures set uniformly at the street line.

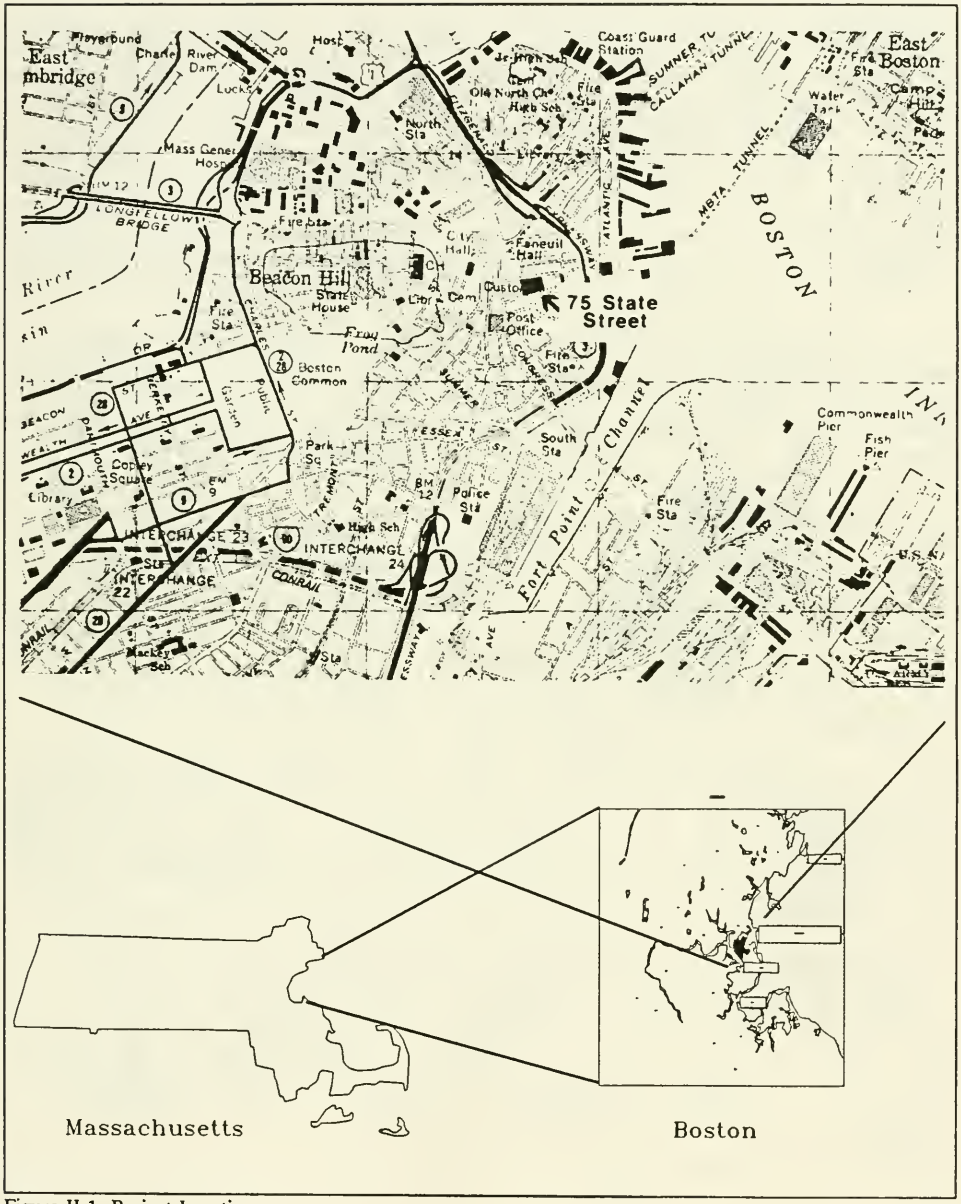
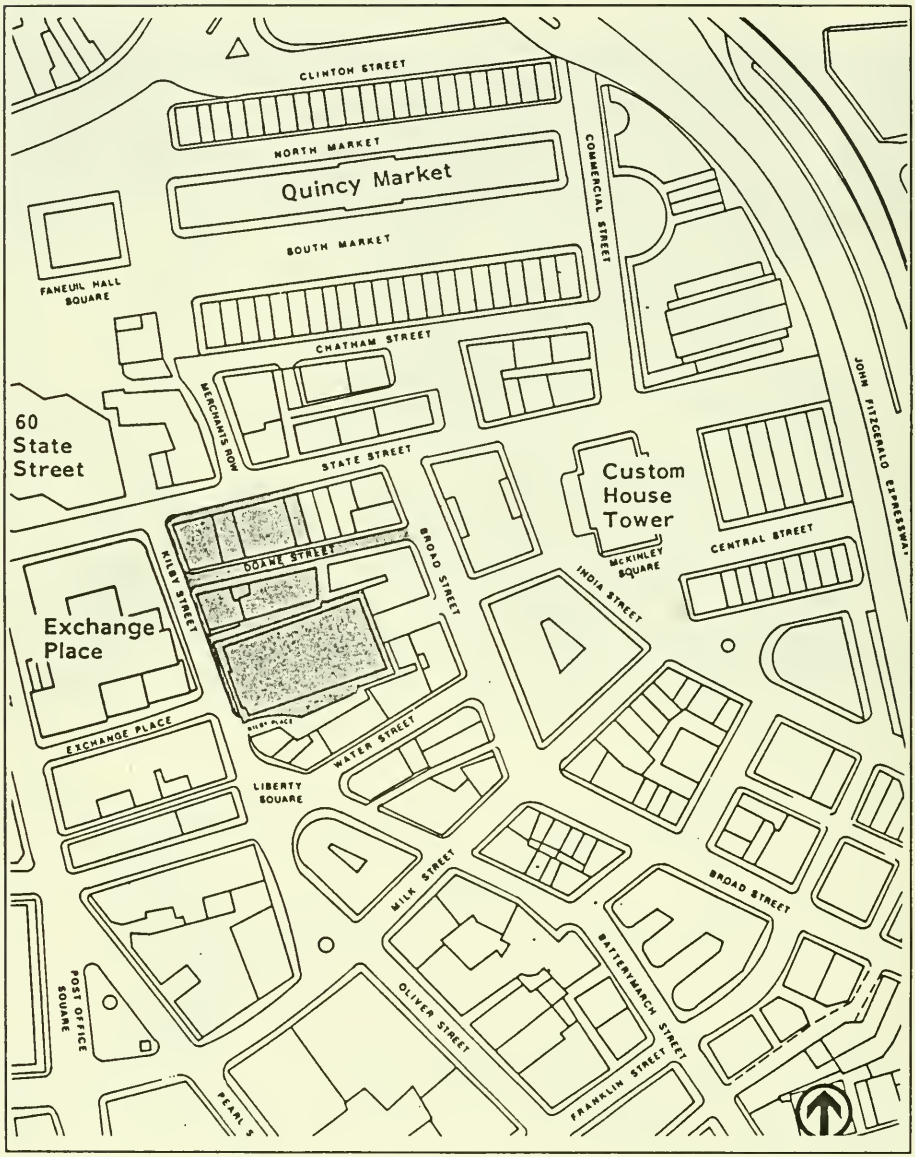


Figure II-1 Project Location



1" = 200'
Figure II-2 Site Context Map

III PREHISTORY AND HISTORY OF THE PROJECT AREA

The first task in assessing the archaeological potential of a property consists of extensive research into the history of the site and its surroundings. This site-specific history, coupled with what is known from earlier research at other locations, helps the cultural-resource manager to prepare models of what can be expected on the property. This research is complemented by research into those activities that, over time, may have modified the archaeological deposits on the site. This research includes but is not limited to any previous utility installation, cellar construction, disaster history (e.g. fires), and any other activities which may have modified the site. The analysis of these two classes of research alters the expectations of the "ideal" model and allows the resource manager to give more accurate direction to such field work as may be needed to confirm expectations about the nature, distribution and integrity of expected resources.

This section draws heavily on material prepared by the Massachusetts Historical Commission for the Prehistoric and Contact Periods and on research by Beth Anne Bower in Timelines' reconnaissance report for the area's Historic Period. Figure III-1 illustrates the various time periods currently established for Southern New England (and thus the 75 State Street Site) and their relationship to world events.

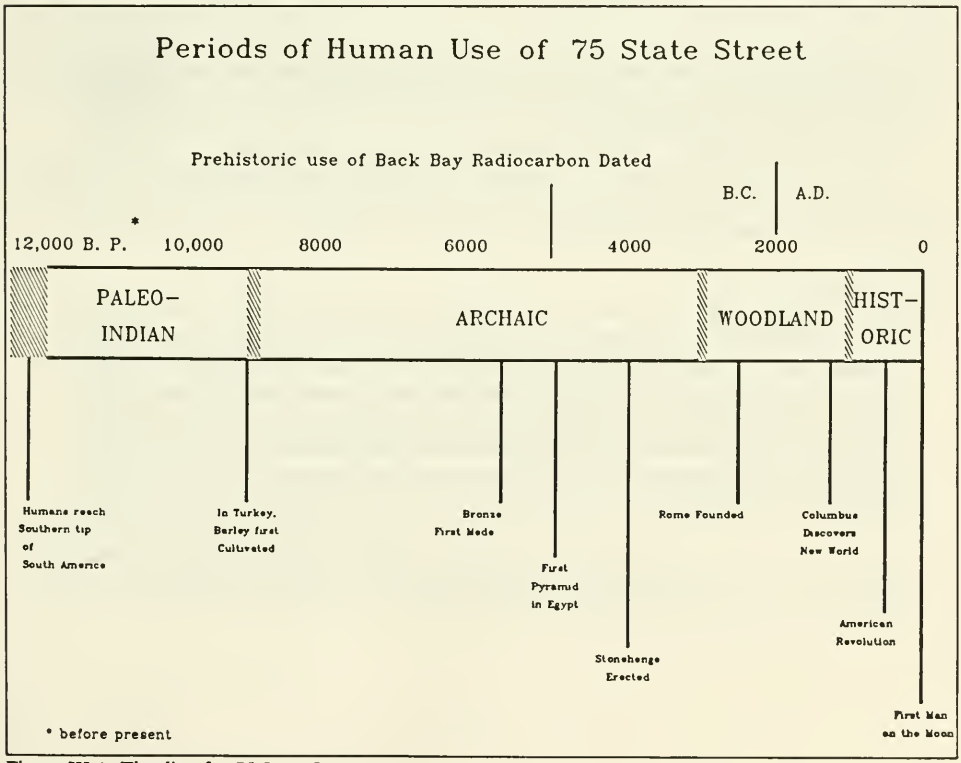


Figure III-1 Timeline for 75 State Street

A. Prehistoric Period ca. 12,000-400 B.P.

The Massachusetts Historical Commission's report entitled "Cultural Resources in Massachusetts: A Model for Management" (MHC 1979) describes the physical environment within which the earliest inhabitants of the Commonwealth lived for close to 12,000 years before the present (B.P.).

> The Boston area is defined naturally by a lowland depression of the Boston Basin. This was flooded in post-glacial times by rising sea levels, forming at the same time the tidal estuaries of the Charles, Mystic, and Neponset Rivers. The area is surrounded by a series of granite uplands, such as the Blue Hills, but modern definition is formed by the circumferential Route 128. Historically the Boston area has served as the primary core of Massachusetts, and at least since the Archaic period (ca. 9000-2,000 B.P.) has been a center for cultural innovation and development. Throughout prehistory and history transportation corridors have radiated out from settlements in the Boston Basin linking the coast to the interior.

In its report to the Bureau of Land Management entitled Summary and Analysis of Cultural Resource Information on the Outer Continental Shelf from the Bay of Fundy to Cape Hatteras (1979), the Institute for Conservation Archaeology of Harvard University predicted the nature and distribution of prehistoric sites on the Outer Continental Shelf, including the Boston area. These predictions assigned the Boston area to the "Southern New England Estuarine Sequence (truncated)." This sequence suggests that the Boston area may have a potential for containing remains of fishing-camp sites dating from the Paleo-Indian Period (ca. 12,000-9,000); and shell midden, fishing camps, and habitation sites representing the Woodland Period (ca. 3,000-400 B.P.).

As the MHC has stated, "Given its complex topography and wide range of available resources, it is not surprising that the Boston study unit has a rich and diverse archaeological heritage" (MHC 1982).

It is also pointed out that:

> No Paleo-Indian artifacts from the Boston area have been found in any collections. Their absence may be the result of the destruction of likely camp sites, either by rising sea levels or by historic development, rather than the lack of Paleo-Indian presence in the Boston area. Early Archaic remains are scarce although present as occasional finds in multi-component sites. The Middle Archaic is well represented in the Boston area; and approximately thirty sites have been identified.
>
> The most numerous prehistoric remains are the Late Archaic small-stemmed point associations. Late Archaic sites are present in a diversity of ecological zones. Rich burial features have been found in Watertown.

> During the Woodland period, sites exhibit a shift towards intensive occupation of the coastal zone with a major reliance on shellfish exploitation. This shift may coincide with the adoption of horticulture as a subsistence strategy. Eleven sites of the Early Woodland period have been recognized in the Boston area. Nearly twenty sites with Middle Woodland associations have been recorded. Late Woodland remains are even more frequent, suggesting an increase in population size. Estuarine heads were likely areas for the location of large villages, but most of these sites were destroyed in the nineteenth century. The size of the Late Woodland population seems generally equivalent to the Late Archaic population, but Late Woodland remains have been found only in the coastal zone (MHC 1979).

While no prehistoric sites have been scientifically excavated in Boston proper, recent work in Watertown (Barfield 1978) and Charlestown (Pendery 1982) illustrate the accuracy of predictions at least for the Middle/Late Archaic and Woodland Periods. Works by Luedtke (1975, 1980) clearly show that the Boston Harbor Islands have been subject to intensive utilization by prehistoric peoples, adding further support to models for prehistoric use of Boston proper.

However, as the MHC points out:

> The classes of prehistoric archaeological sites which survive in the Boston area are generally special-purpose sites located in peripheral areas. Shell middens on islands, lithic quarries, rock shelters, and small camps have often survived, especially in upland reservation and park areas. Sites in core areas that were located in prime lowland, riverside, or estuarine areas (i.e. Boston proper) have largely been destroyed. Though they were partially documented in the beginning of the century, only fragments of these important sites are assumed to survive.
>
> ...
>
> Continuous development in the Boston Area has destroyed hundreds of prehistoric sites, however, some prehistoric sites and fragments of sites have survived, even in the downtown itself. The discovery and salvage of the Boylston Street Fishweir justified caution regarding the possibility of site survival, even in the most developed sections of the City. Similarly, a shell midden is reputed to have been uncovered during excavations for the parking garage next to Quincy Market. The most likely areas where prehistoric sites could survive in Boston and Cambridge are places where extensive filling buried original shoreline and estuarine margins.

This last sentence accurately characterizes the 75 State Street site.

B. Contact Period (A.D. 1500-1620)

The environment greeting the first European visitors to the Boston area provided a number of distinct economic advantages, and thus the area became a focus of early exploration and settlement.

> The area lies at the mouth of the Charles River, a stream which was navigable for several miles inland for the ocean-going vessels of the seventeenth century. The river provided easy access into the interior from which the settlers expected to draw a trade that would yield an immediate profit. In addition, in 1616-1617 a plague had decimated native groups who originally occupied the area. There were few natives left to dispute the ownership of the first European settlers (MHC 1979).

The period has been further described by the Boston Area planning document.

> The major event of the period was European contact with the native population. Though slowly at first, European influence affected and altered native culture throughout the period. Of the many effects, the epidemics of the late 16th and early 17th-century were particularly drastic, decimating the native population and effectively wiping out the social structures of the native groups within the unit.
>
> ...
>
> During the Contact period, the estuaries of the major rivers appear to have functioned as regional core areas. These estuaries (from the coast up to the first major fall line) served as one pole in a seasonal pattern of movement organized around the collection of food and other resources. The other pole, located at the opposite end of the riverine corridor which connected them, was a series of upland tributaries and ponds.
>
> ...
>
> While the details of this pattern of seasonal activity remain unclear, the estuary areas appear to have functioned as regional cores in several ways. They were gathering points for an otherwise dispersed population. Occupied primarily during the spring and fall, they were the focus for community food gathering activities. Fishing was probably the most important activity although the collection of shellfish and hunting of migratory water fowl occurred as well. Finally, although economic efficiency may have brought people together in these estuary locations, these large gatherings were undoubtedly important for social and political reasons as well.
>
> ...
>
> Within the Boston unit, the Neponset and Mystic estuaries were the important regional cores.
>
> ...

> Though scattered evidence suggests an active native presence along the Charles estuary, the Charles River appears to have served more as a boundary between the Mystic and Neponset cores than as a separate core area. Further research is needed to clarify whether this was the case or whether the Charles estuary also functioned as a core area (MHC 1982).

The location and study of a Contact Period site on the Shawmut Peninsula would provide important new data that would probably modify current thinking as described above.

European activity within the area created changes among both the local populations and the settlers themselves.

> The presence of Europeans along the coast probably intensified the Woodland pattern of coastally-oriented settlement, especially as trading patterns formalized. It did not, apparently, alter the basic pattern of settlement and seasonal movement. During the final decades of the period, newly introduced infectious diseases devastated the native population. Although considerable cultural disorganization resulted, the survivors continued to cluster in the two traditional core areas.
>
> ...
>
> The primary transportation system during the Contact period was a complex network of trails. Generally these followed the natural contours of the landscape, changed elevation at an easy grade, and favored sunny rather than shady slopes whenever possible. Besides avoiding rough or difficult terrain, the trail network had a braided character, branching around obstacles and offering a variety of alternative routes for crossing the landscape.
>
> ...
>
> The second group of trails were those which ran along the estuaries and out the peninsulas which extended into the bay. These provided access to the tidal flats and the other resource of the bay and the islands. Trails of this kind were located on Winnisimmet (Chelsea), Mishawam (Charlestown), Shawmut (Boston), Mattapanock (South Boston), and Squantum (Quincy) as well as Winthrop and Cambridge [emphasis added].
>
> ...
>
> While the trail network appears to have been the major transportation system used by native people, archaeological evidence from the Harbor Islands and ethnographic accounts indicate that water transport was also used.
>
> ...
>
> No period settlements have been archaeologically documented within the study unit. A few pertinent settlement descriptions do survive from ethnohistorical sources (MHC 1982).

C. Historic Period - by Beth Anne Bower

The reconstruction of the 1630-1825 development of the 75 State Street block is based on information obtained from the Annie Thwing files, the Bowditch Volumes of Boston Conveyances (1825-1860), and Clough's map reconstructions of Boston in 1648, 1676, and 1798, all in the collections of the Massachusetts Historical Society (Figs. III-2, -3, & -4).

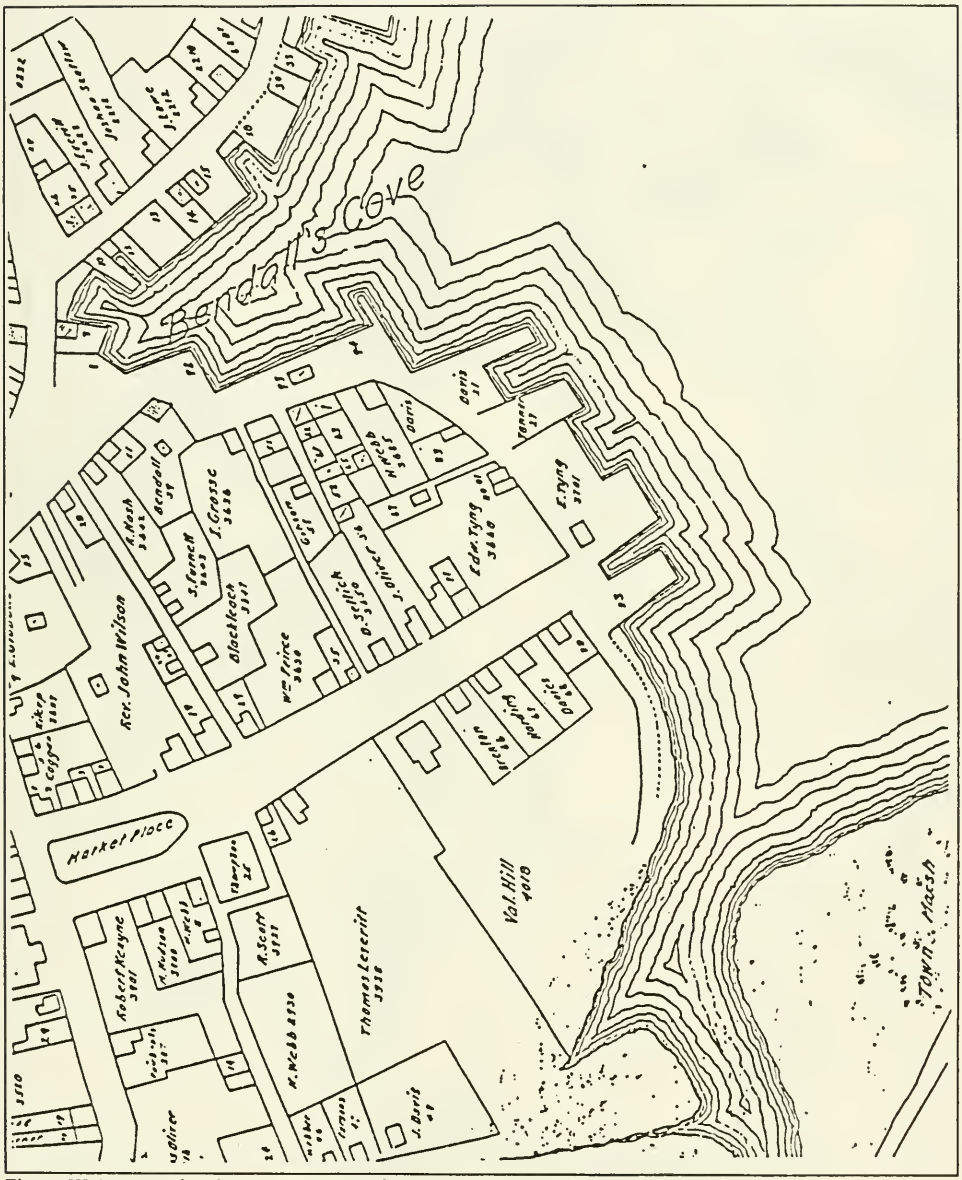


Figure III-2 1648 Clough Map, Courtesy of the Massachusetts Historical Society

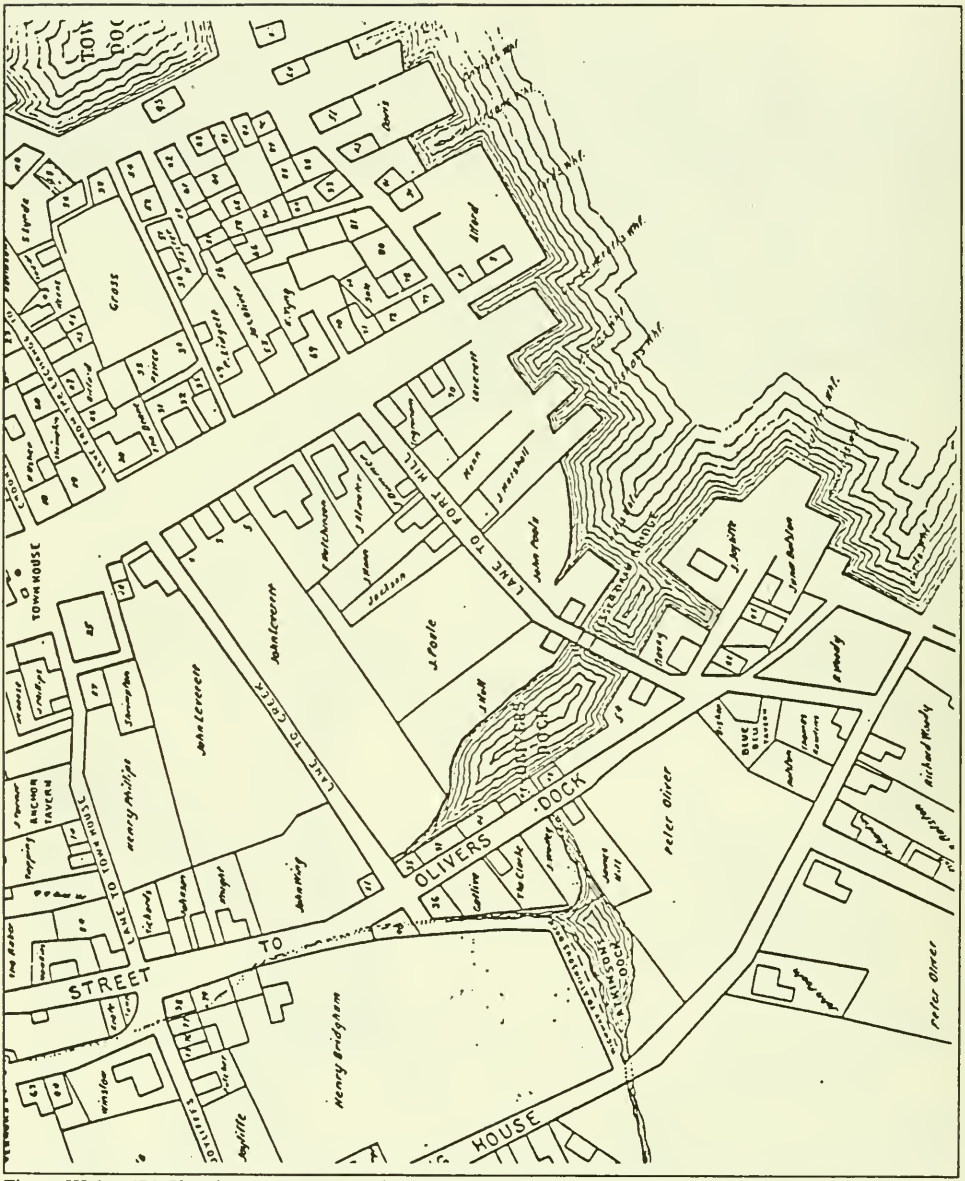


Figure III-3 1676 Clough Map, Courtesy of Massachusetts Historical Society

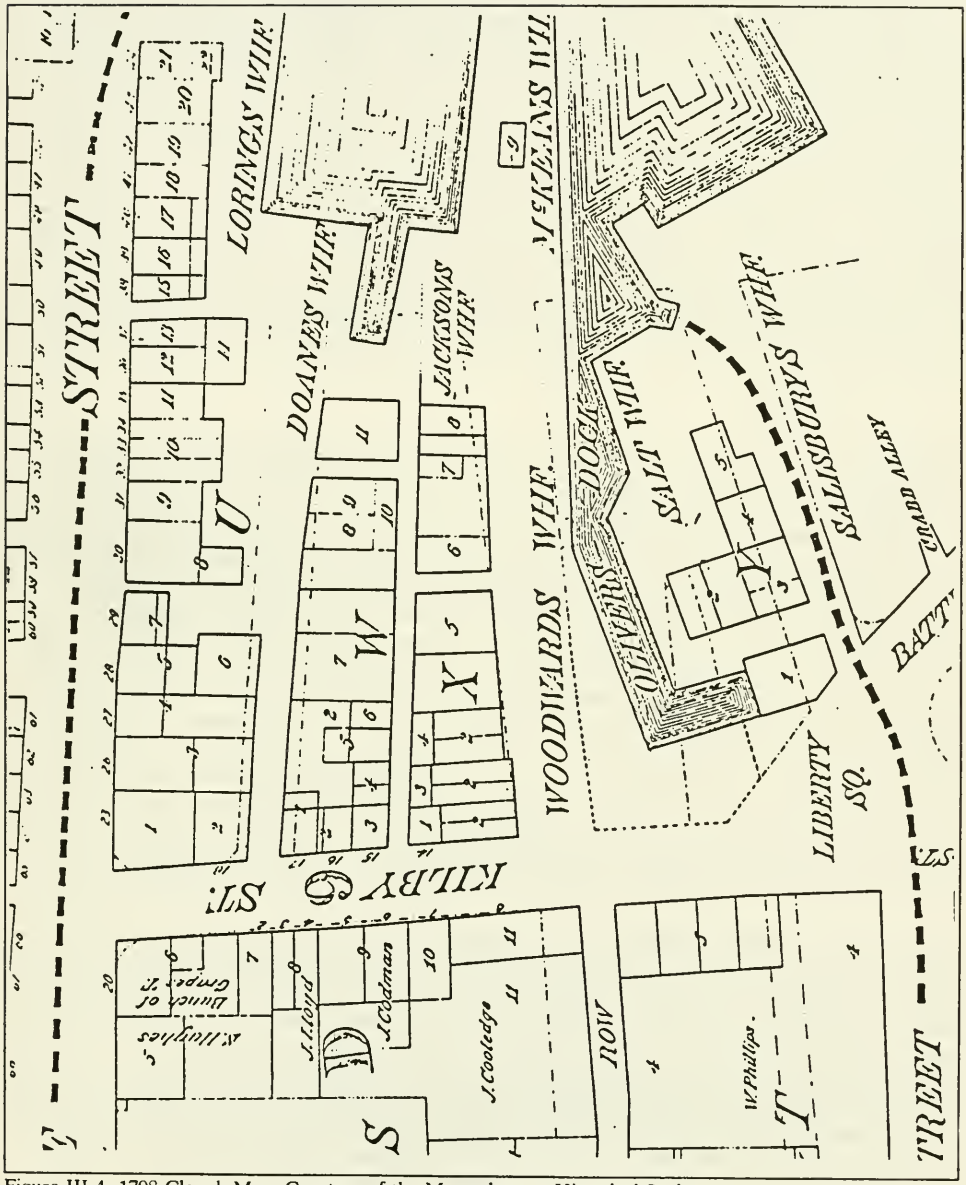


Figure III-4 1798 Clough Map, Courtesy of the Massachusetts Historical Society

The 75 State Street block is located on the original shoreline of the Shawmut Peninsula. The first group of Europeans settled the peninsula in 1630, when Winthrop's fleet of settlers dispersed from Charlestown and renamed Shawmut Boston. This early settlement clustered around the Great Cove, nestled under the Trimountain and sheltered by Windmill (now Copp's) Hill to the north and Fort Hill to the south (Figs. III-2 and -5). Although the primary landing spot was in Town Cove, State Street (variously called Broad Street, Townhouse Street and King Street) was the major street leading from the sea. It ran from a bluff west towards Cotton (later Pemberton) Hill to the area which was to become the market (now the location of the Old State House). Just to the south of the block was Shelter Cove, a marshy area which cut inland to Shelter Creek. At the head of Shelter Creek was a spring, and it was next to that spring that Governor John Winthrop built his house. Probably half of the project area was under water at the time of this first settlement. The corner of State and Kilby streets was and still is the highest spot on the block, from which the land slopes west to the harbor and south to Liberty Square (then Shelter Cove).

1. 1630-1665

The majority of the original land was between State Street and Bang's Alley. Along State Street were small house lots assigned to William Davis and William Hudson. William Davis had a house and garden lot which stood at the east corner of the 12-ft. passage (later Mackeril Lane, then Kilby Street) and State Street (Fig. III-5, lot A). Much of his property is now under Kilby Street. Davis was a gunsmith and occupied the property until his death in 1645. His son William Davis, Jr. moved to Barbados after his father's death and sold the house and land to William Ingram, a cooper. Between 1658 and 1680, Ingram built or allowed to be built a tavern or ordinary which was known as the Bunch of Grapes. This was one of Boston's most famous taverns, used for state occasions and selectmen's meetings. Its location near the marketplace, waterfront and church made it a likely meeting place. Historians differ on the exact location of the earliest tavern. Thwing believes it was east of Mackeril Lane with a west extension on the other side of Mackeril Lane (1920:137). Whitehill describes it as being at the corner of King Street and Mackeril Lane (1959:26). The city of Boston erected a plaque on the Exchange Building on State Street between Kilby and Congress Streets marking its conjectural location. Bowditch places it east of Mackeril Lane and presently under Kilby Street (1825-1860:17, 200). We assumed that this famous ordinary probably does not survive archaeologically in the present project area.

To the east of the Bunch of Grapes was the house and garden lot of William Hudson, Sr. (Fig. III-5, lot B). Hudson was an early settler, admitted as a freeman in May of 1631 (Rutman 1965:137, 206). In 1637, Hudson was granted "a foot and a half to come into the street way for setting up of his new building towards the seaside where he dwelleth" (Boston Record Commissioners 2.20). Hudson moved to another residence further from the water by 1647 and allowed his son William Hudson, Jr. to first mortgage and then sell his dwelling house. In 1649 the town granted William Hudson, Jr. a license to keep an ordinary (Thwing 1920:137), probably in the seaside building. William Hudson, Jr. then sold the lot to Francis Smith who sold it ten years later to John Holland. Holland promptly died and his widow sold the west third of the land on State Street to Thomas Peck, shipwright. This lot

contained "a house now decayed formerly there" (S.D.3.15). The middle third of the lot was sold to James Oliver, who sold it to Thomas Peck.

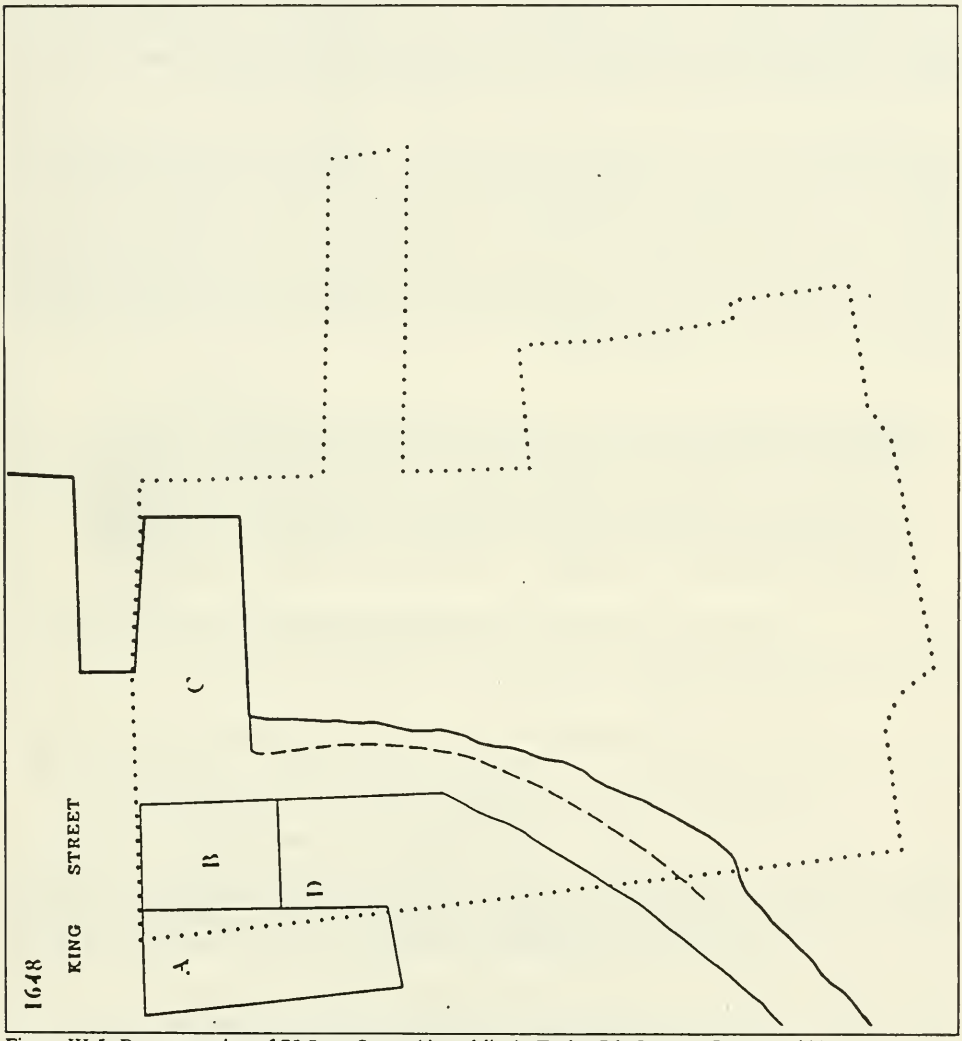


Figure III-5 Reconstruction of 75 State Street (dotted line) Early 17th Century (by H. Heidt)

The final piece of land along State Street is the most difficult to reconstruct. Bowditch's reconstruction in 1825 states that William Hudson sold the final third of his property, described as extending "to the sea," to John Leverett (1825-1860:29, 395). Clough's maps and the lack of documentary records suggest that this key parcel may have originally been granted to Elder Thomas Leverett and passed to his son Governor John Leverett at his death in 1650 (Clough 1922). Whatever the circumstances, the waterfront parcel on State Street was owned by Governor John Leverett by 1660 (Fig. III-5, lot C).

The remainder of the block behind (to the south) of State Street was first granted to Governor John Winthrop, Esquire (Fig. III-5, lot D). Winthrop sold portions of this marshland to William Brenton, Valentine Hill and his son Stephen Winthrop. None of these men lived on the block, preferring to live up the hill, closer to the spring. Brenton arrived in 1633 and employed at least seven servants in the next five years (Rutman 1965:73). It is possible that he constructed houses for his servants on his land near the waterfront. In 1643 Winthrop, Valentine Hill, and others collaborated on a project to dig out Shelter Cove (between the present State and Mill streets around Liberty Square). The selectmen agreed thus on March 29, 1643:

> Having considered the request of sundry brethren concerning Digging of a creeke for the harbor of boats in the marish near William Hudson Sr., his howse, we doe conceive the worke very necessary, and doe thinke meet to move the Towne that (if they shall see good), it may be carryd an end with their common assent: in meanwhile, John Winthrop Esq., Governor, Valentine Hill, merchant, Richard Fayrebankes, Robert Turner and James Davis have liberty to make entrance into the work (T.R.2.73).

In 1649 there is the first mention of what was to become Kilby Street as "of 12 feet between Capt. Harding and William Davis along straight to the bridge which the town and Mr. Hill set up" (Thwing 1920:145-146).

Stephen Winthrop's heirs sold their portion of the marsh to John Leverett in 1659. He then sold it to John Hull, James Johns, Peter Oliver and Amos Richardson. Valentine Hill sold his portion to Williams Philpot, who constructed a house and a salt house, and to his nephew Richard Hutchinson. Peter Oliver moved quickly to consolidate the southern portion of the block and the entire area around what is now Liberty Square. In 1658 he agreed with Hutchinson to "maintain a small wharf now ruined, lying in a small cove between the wharf of said Oliver and Henry Webb" (S.D.3.130b). In 1664, Oliver bought a warehouse and the south part of the dock, now known as Oliver's Dock, from John Everard, alias Webb (finishing the consolidation of what was known as Oliver's Dock until after the Revolution).

To summarize the first developmental period from 1630 to 1665, the 75 State Street block was in the center of the earliest European settlement in Boston. Bounded on the north by the main highway leading from the sea to the marketplace, this primary waterfront property was dispensed to some of the most prominent members of the community. Most were

freemen and church members, and many of them held town offices (Rutman 1965:73-86). The earliest dwellings constructed on the block were either "starter homes" for the owner or used as tenant houses. William Brenton never occupied his lot, but allowed others to construct homes on it. William Davis and William Hudson moved to more prestigious lots away from the wharves, selling out to artisans. At the same time the waterfront area was wharfed out almost immediately at the end of State Street and at Shelter Cove. The proximity to the waterfront and the location on a major commercial street prompted the conversion of some of the dwellings to taverns which were used not only for entertainment and lodging, but also for government meetings and state dinners. On the basis of the map and deed reconstruction and the information from borings, it is probable that the low-water mark, or sea, was located just east of the present Fiske Building (89 State Street). There is no record of concern about flooding in the town records, and because of the continuous occupation of the site it is likely that the block was on a bluff. From that point, it was wharfed out within the first 20 years of settlement. To the south, the marshland was bridged and dredged to create a sheltered dock in Shelter Cove.

2. 1665-1700

After 1665, the 75 State Street block became more developed. William Brenton moved to Taunton in the late 1660s and divested himself of all his land in Boston. From north to south, the buyers of his holdings on the 75 State Street block were:

1. Ingram and Thomas Peck (just south of the Davis lot that Ingram bought in 1658) (Fig. III-6, lot D);

2. Thomas Peck (an additional lot seaward east of number 1);

3. John Man (a lot of land and an old house) (Fig. III-6, lot E);

4. John Marshall (a house and a lot of land toward the sea) (Fig. III-6, lot F); and

5. John Poole and his wife Elizabeth (Brenton) Poole (land flats and an orchard) (Fig. III-6, lot G).

In 1668, the town granted John Marshall the right to wharf before his house (Boston Record Commissioners 7.41). By 1673, John Man had constructed a warehouse and a wharf and John Poole a wharf with a warehouse and a house on it (Fig. III-6).

In 1679, a fire swept from the Mill Creek through Dock Square and south to Oliver's Dock, destroying 80 dwelling houses (Brayley 1889:15). John Marshall received 10 pounds for the gunpowder he provided to blow up houses in the path of the fire ()Brayley 1889:19). The town quickly rebuilt.

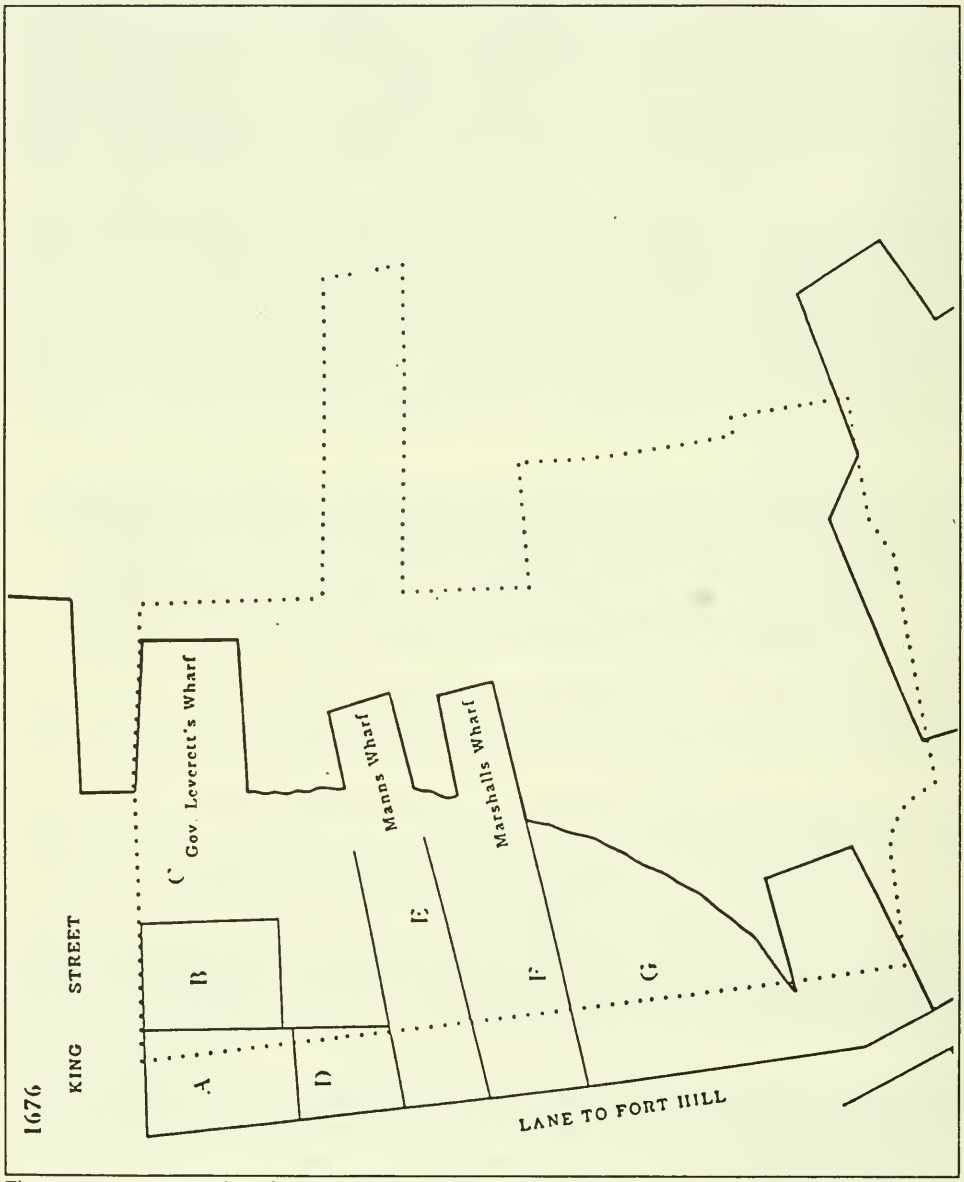


Figure III-6 Reconstruction of 75 State Street Site (dotted line), 1676 (by H. Heidt)

Possibly inspired by the disastrous fire, William Ingram sold his property at the corner of Mackeril Lane and State Street to Capt. John Holbrook, including the tavern called the Bunch of Grapes (Fig. III-6, lot A). Thomas Peck occupied the lot to the east and built houses and a wharf at the end of a lane (Fig. III-6, lot B). Called originally the "highway from Mr. Drummer's Lane (Mackeril Lane) down to Peck's wharf," it later became Doane Street. Next to Peck was the land of Governor John Leverett, containing a house and warehouses (Fig. III-6, lot C). These were administered by his son-in-law Elisha Cooke, Sr. and occupied by Andrew Faneuil (uncle of Peter Faneuil). In 1681, the town reestablished a line between Thomas Peck and Elisha Cooke's houses that had been lost in the fire.

To the extreme south of the block, Peter Oliver's Dock became more fully developed (Fig. III-3).

John Man died in the 1690s and his heirs sold the house, land, wharf and a tavern called "The Queen's Head" on Mackeril Lane to James Barnes, merchant, in 1705. John Marshall died in 1692, and his land was divided between his sons Samuel and Thomas. Thomas Peck died in 1700, having already deeded most of his land to his children and grandchildren, namely James Gooch, mariner; Faith Waldo, widow; and Thomas Peck, Jr., shopkeeper.

By the turn of the seventeenth century, the 75 State Street block had become a bustling waterfront area with taverns, warehouses, wharves, houses, gardens and yards for drying clothes. The deeds mention privy and well locations as well. Most of the buildings, if not all of them, postdated the 1679 fire. Although many of the landowners did not live on the property, they often housed their children and grandchildren on the lots, passing them on to later generations when they died. For additional income, many landowners added tenant units next to or behind buildings designated for their families. Those employed in the area were primarily merchants, shipwrights, coopers, bakers, shopkeepers, innkeepers, and mariners. The wharfing out that had started at the end of State Street blossomed with the construction of Peck's, Man's, Marshall's, and Poole's wharves. These were expanded through the next century until 1880, when the block was completely filled in.

3. 1700-1760

At the beginning of the eighteenth century, the 75 State Street block was a mixed residential, commercial and craft area. In 1711, a great fire ravaged Boston, but was stopped as it reached the project area. A house occupied by innkeeper Francis Holmes was pulled down to stop the spreading fire. Holmes ran the Bunch of Grapes and was succeeded by his wife Rebecca Holmes (Fig. III-7, lot A). The owners of the land, the Holbrook family, kept possession of the tavern and the adjacent land until 1724, then they sold the parcel to Thomas Waite.

Next east was the land of the Peck family, variously occupied by Thomas Peck, Jr. and his nephews James Gooch and William Peck (Fig. III-7, lots B and D). In 1707, James Gooch asked the town's permission to build, east of his house, an addition 28 by 20 by 22 with a

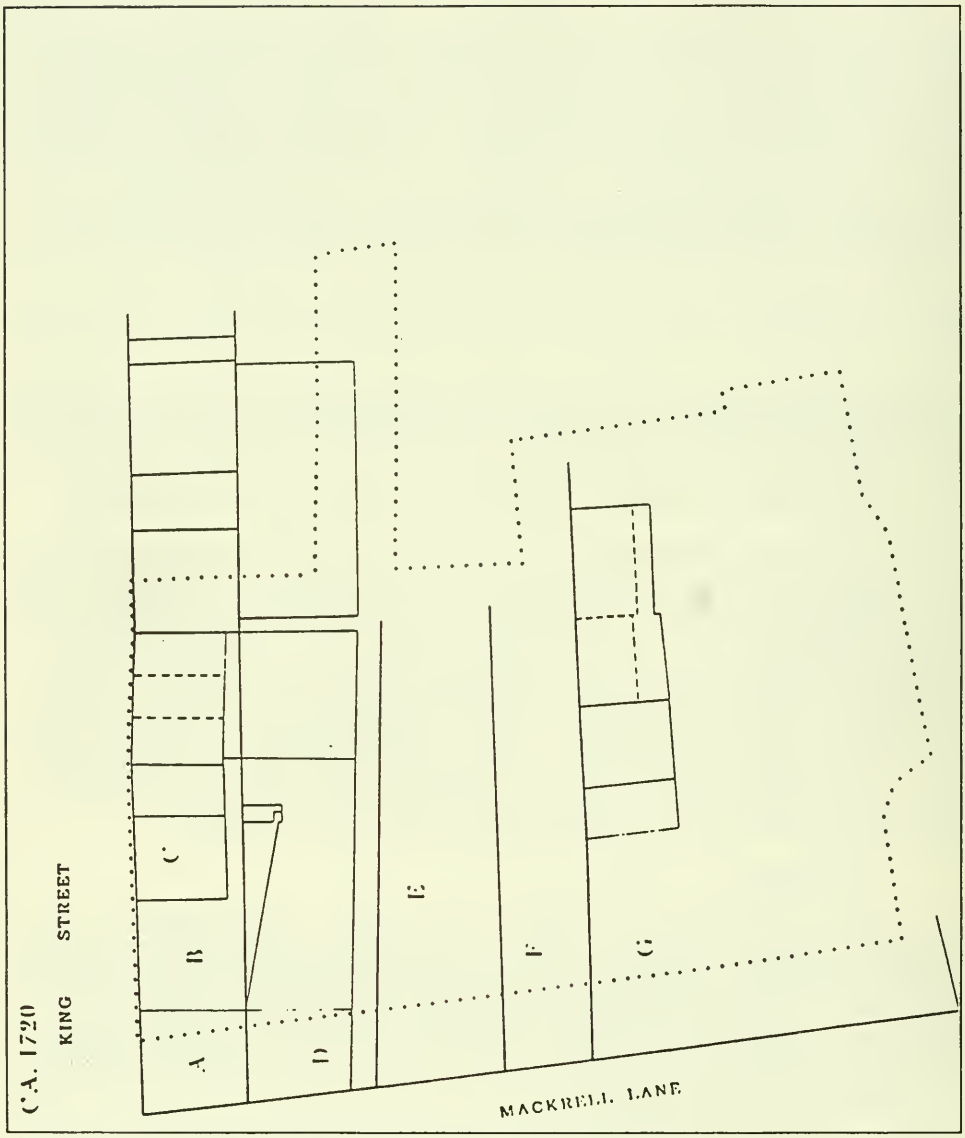


Figure III-7 Reconstruction of 75 State Street Site (dotted line) ca. 1720 (by H. Heidt)
Based on Suffolk County Deed Maps Redrawn by Bowditch 1825-1860

flat roof and battlements (Boston Record Commissioners 7.8). When Gooch died in 1732, his land and the land of his aunt, Faith Waldo, were sold to John Doane. Thomas Peck, Jr. sold a portion of his property on State Street to James Gibson, mariner, in 1711. Gibson promptly built a new shop, while continuing to manage the tavern (possibly a successor to the Hudson tavern) called the Marlborough Arms. The Marlborough Arms was sold to Roger Passmore in 1741. The other half of Gibson's property was sold to William Peck, glazier, in 1722.

To the east of these lots was the land owned by Elisha Cooke, Sr., which he had obtained from his father-in-law John Leverett (Fig. III-7, lot C). Cooke was a doctor, lawyer and statesman. He led the "popular" faction of younger and less established merchants and artisans against the Royal Governor, Joseph Dudley (Nash 1979:80, 86). His property was described as land and wharf at the bottom of Townhouse [State] Street in Boston, butting on the house occupied by Mr. Andrew Faneuil, merchant with three warehouses, one cooper's shop and flats. He was cited by the town in 1712 for erecting a building that encroached on King Street (Boston Record Commissioners 11.124). These properties were passed on to his son, Elisha Cooke, Jr., on his death in 1715. Elisha Cooke, Jr., also a physician, followed in his father's political footsteps, leading the "caucus" through the 1720s (Nash 1979:87). He received the wharf, the house, the three warehouses, the cooper's shop and flats. His daughter Elizabeth received "the brick tenement in possession of Anne Hubbard, widow" and the brick tenement in tenure of Thomas Warren "with free use of the passageway on east side and to the well therein standing." Elizabeth sold her portion to her brother Elisha (Bowditch 29:395). When Elisha Cooke, Jr. died in 1737, the land was divided among his heirs.

James Barnes, the owner of the Man property, died in 1711. His executors sold his house, land and wharf with flats to the east to John Marshall, cooper, in 1720 (Suffolk Deeds 35.56) (Fig. III-7, lot E; Fig. III-8). Marshall sold the property to John Doane in 1738 (Suffolk Deeds 56.40). When John Doane died in 1755, his property included the former holdings of John Man, James Gooch, and Faith Waldo. His son, John Doane, Jr., received "all house, land, wharf and flats bought of John Marshall" from his father's estate (S.P.R.50.702). When he died soon thereafter, his estate fell to his wife Lucy, who married Atherton Haugh.

The John Marshall estate south of the Man property was divided between John Marshall's heirs, Thomas and Samuel, in 1692 (Fig. III-7, lot F). Thomas Marshall died (probably around 1715) and his son Thomas received the property in 1733. He died in 1746 and the property, including several brick and wooden houses and rights to warehouses and the wharf, was divided among his heirs. Samuel Marshall was a retailer (Boston Record Commissioners 13.314). He deeded portions of his property to Benjamin Salisbury, Elisha Townsend (cooper), and Briant Parrot (his nephew). Parrot bought a cooper's shop and land. When he died in 1756, his parcel, including a double house, wharf and land, was divided between his heirs.

The next parcel south was the Poole estate, containing a wharf and warehouse (Fig. III-7, lot G; Fig. III-8). In 1707, Poole sold his dwelling house, situated on his wharf and

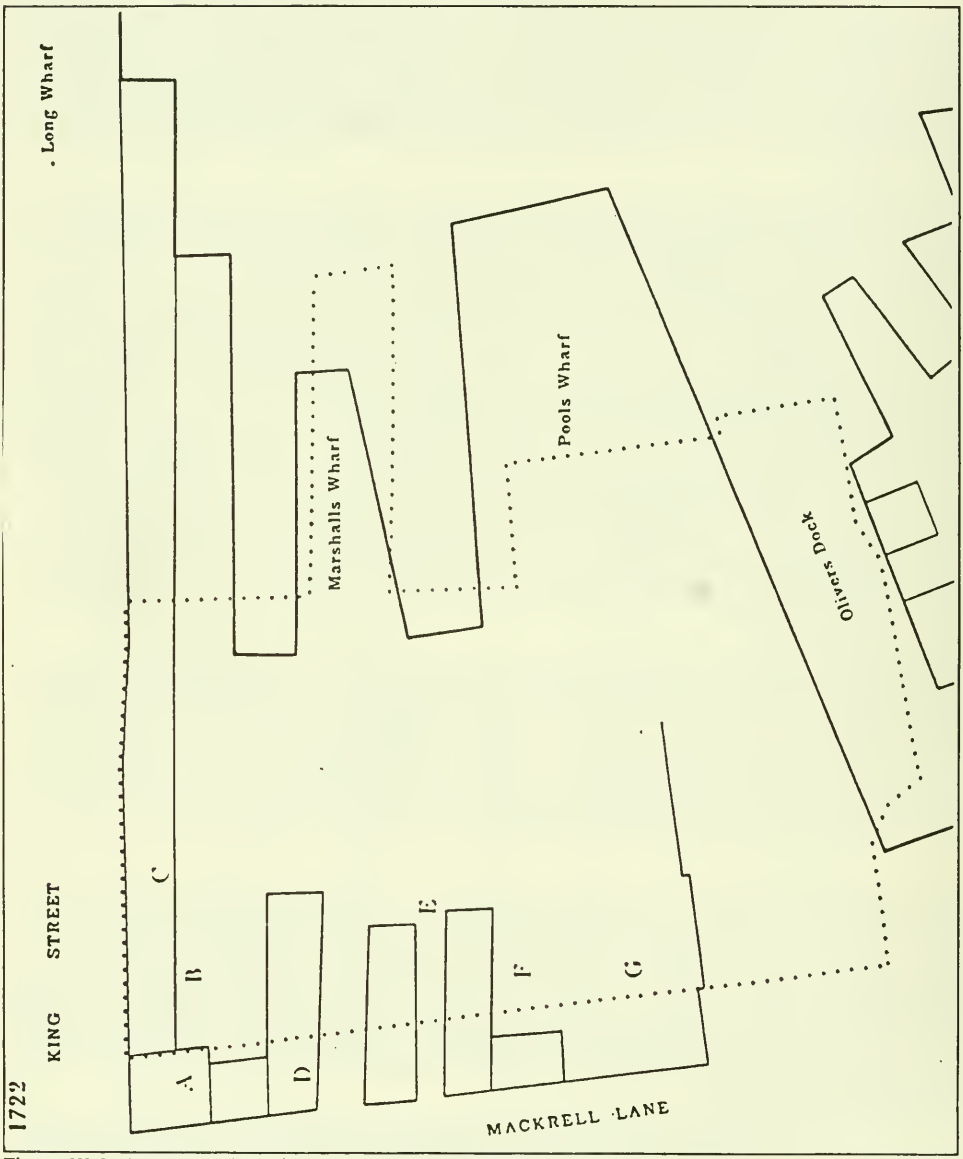


Figure III-8 Reconstruction of 75 State Street (dotted line) ca. 1722 (by H. Heidt). Based on Clough's redrawing of Bonner (1900).

measuring 40 by 22 feet, together with the warehouse east of it, to his son-in-law Timothy Lindall. Their daughter inherited the estate and married Francis Borland. Throughout most of the eighteenth century, Poole's wharf was known as Borland's Wharf. Peter Oliver's dock continued to flourish after his death and continued to be known as Oliver's Dock.

In 1760, there occurred the greatest fire in Boston's history. All of Mackeril Lane and the wharves off it were burned, and all the stores in the area "excepting those which front the south side of King Street" (Brayley 1889:60-62). Tenements, warehouses, barber shops, a gunsmith's, several chairmakers', cooper's shops, sail lofts, and a fish market were among those destroyed (Brayley 1889:62). The entire block had to be rebuilt, but first the town selectmen decided that Mackeril Lane should be widened by 40 ft., taking with it much of the original William Davis lot and the location of the famous Bunch of Grapes Tavern. The new street was named Kilby Street in honor of Christopher Kilby, a Bostonian who served as an agent in England, and donated 100 pounds to the relief of the fire's victims.

The time period between 1700 and 1760 saw the intense development of the block as a mixed residential, craft and commercial area. Controlled primarily by a few families--the Cookes, the Pecks, the Marshalls, the Borlands, the Olivers and the Doanes--the wharves were enlarged, warehouses built, and additional houses constructed. The same trends that had been established in the late seventeenth century continued through the first half of the eighteenth century. Craftsmen that settled in the area were primarily coopers and shipwrights. The number of named taverns increased to three: the Bunch of Grapes at the corner of Mackeril Lane and State streets, the Marlborough Arms next to it on the east, and the Queen's Head on the east side of Mackeril Lane, probably at the present corner of Doane and Kilby streets. Leverett's Wharf became a portion of Long Wharf, Peck's Wharf remained as it was, Man's Wharf became first Barnes's, then Marshall's, then Doane's Wharf. The original Marshall's Wharf eventually became Parrot's Wharf, and Poole's Wharf became Borland's Wharf. Oliver's Dock remained Oliver's Dock.

4. 1760-1825

The period after the 1760 fire was one of rebuilding (Fig. III-4). Francis Borland was "granted liberty to rebuild his warehouse on the wharf to eastward of Mackeril Lane near Oliver's Dock" (Boston Record Commissioners 29.109). Paul Baxter asked leave "to build a cooper's shop on his land at the back of the land where Blue Anchor Tavern was [before the fire] near Oliver's Dock" (Boston Record Commissioners 19.127). Many landowners took the opportunity to divest themselves of waterfront property. The Thomas Marshall heirs sold theirs to Samuel Bang, cordwainer, who built a house shop, and tenements.

The Peck family sold the wharf estate in the rear of the State Street block to Nathaniel Wheatley in 1771 (Bowditch 1825-60:17; 200-223). The vacant lots from the corner of Kilby Street and State Street east were rebuilt as brick warehouses. By the 1770s, much of this area was owned by Elisha Doane, Esq., who also gained control of the Wheatley estate in 1780 (Suffolk Deeds 132.105). Wheatley's estate was described as a mansion house, a large red-painted store leading down to the wharf, and land and a wharf situated at the back of

the mansion house (Bowditch 1825-60:29:394). Doane's estate was divided in 1783 by his heirs and reassembled by his son Isaiah. The Borland family sold their land, buildings, and wharf to Ebenezer Woodward in 1784, along with the salt wharf near Oliver's Dock. This parcel was described as "all that wharf and tract in said Boston called 'Borland's wharf' near Oliver's Dock together with the brick warehouse, cooper's shops and shops or row of buildings at the head of same" (Bowditch 1825-60:9, 293). On August 24, 1783, a fire occurred at Oliver's Dock in the barn occupied by the wharfinger Mr. Crane. It spread to five other barns, the dwelling house of Jeremiah Russell, and the store of the Hon. William Phillips before being extinguished (Brayley 1889:87). Around 1800, Oliver's Dock was filled in and the Central Street Association was formed to build stores along the road to Woodward's (later Central) Wharf (Larson 1981:2; Bowditch 1825-60:9, 301).

In 1825, another fire swept the 75 State Street block. The fire of April 7, 1825 is said to have broken out in a cooper's shop in Doane Street and was caused by cooking clam chowder. The fire spread to old wooden buildings in the rear that were occupied by very poor families. Fifty stores were consumed in the fire, which was confined to the area bounded by State Street, Kilby Street, and Liberty Square. The financial loss was estimated at 1 million dollars (Brayley 1889:148-149). The poor performance of the private engine houses in this fire led to the formation of the Boston Fire Department (Brayley 1889:149).

5. 1825 - Present

After the fire of 1825, the 75 State Street area was rebuilt, primarily with brick structures. By this time, the landfill activities along the waterfront placed the harbor at least a block away. The three- and four-story brick or frame structures housed commercial businesses associated with port activities; insurance offices, banks, and later telegraph offices. The Lechner's Building on Central Court behind the Kilby Street garage is an example of the type of building that would have been constructed. Most of the present lot lines existed in 1825 and had only two building episodes to the present. Examination of historic photographs, building permits, and the BRA inventory of the financial district suggests these individual site histories.

73-75 State Street, 10 Kilby Street

A ca. 1840 "east view of State Street Boston" (which looks west!) shows the corner of Kilby and State Streets occupied by a brick building with an awning advertising the Fireman's Insurance Office (Society for the Preservation of New England Antiquities-SPNEA-State Street File Number 40). A ca. 1850 photograph of an east view of State Street shows a four-story brick commercial building painted white (SPNEA State Street Mounted). Sometime before 1888, the Atlantic National Bank building was constructed. It was designed by George W. Harvey. The building had a corner entrance of the Exchange Building across the street. The building was destroyed by fire in 1970. It became a parking lot.

77-79 State Street

Pre-1860 photos show a three-and-a-half-story brick structure. By 1888, a three-story granite-front commercial building had been constructed. This building was also destroyed by fire in 1970. At the time of the project's inception there was a small Fotomat store on the lot.

83-85 State Street

By 1850, this site was occupied by a four-story brick commercial building. In 1924, a five-story brick building with a full basement was constructed. The building contained a deli and four apartments. The basement was 10 ft. deep.

89 State Street

The Fiske Building was constructed in 1889 by J. N. Fiske. It replaced three brick commercial buildings. Although it was originally 10 stories high, the building's roof and top story were damaged by fire in 1961. An additional five stories were then added. The basement of the Fiske Building was only 5 ft. below street grade, with the exception of the boiler room in the northwest corner (8 ft. below street grade) and a sump-pump area under the entrance (about 6 ft. below street grade).

99 State Street

Number 99 State Street was a five-story brick building. The BRA inventory states that this building was constructed in the early twentieth century. The basement was approximately 8 ft. below street grade.

14-20 Kilby Street

The 1874 Hopkins Atlas shows two commercial brick structures on the site of 14-20 Kilby Street. The 1919 structure was begun as a nine-story steel-frame building covering both lots. The building was completed in 1922 in conjunction with 5 Doane Street. It had a 12-ft.-deep cellar that reached under the sidewalks of both Kilby and Doane streets.

5 Doane Street

Number 5 Doane Street was a seven-story brick commercial building constructed in 1922. Prior to 1922, the site was occupied by five brick commercial buildings that were probably constructed in 1925. The elevation from Doane Street to Bang's Alley dropped almost 4.5 ft., so the basement level at Doane Street was about 10 ft. below street grade, while on the Bang's Alley side it may have been only 4 ft. (This portion of the basement was not available for inspection.)

30-36 Kilby Street

The parking garage at 30-36 Kilby Street covered both sides of what was Central Street. From 1825, Central Street was lined with three- and four-story brick commercial buildings similar to the Lechner's Building on Central Court. In 1881, Moses Williams built at 30 Kilby Street a five-story brownstone-fronted office building called the Liberty Building. The building and adjacent structures were demolished in 1950, and the lots served as open parking until 1968, when the present garage was constructed.

IV PREVIOUS INVESTIGATIONS

As Stephen Mrozowski (1985:34) has pointed out:

> Archaeology in Boston involves the study of over 9,000 years of human habitation and adaptation. The archaeology of Boston, however, falls under the domain of Historical Archaeology that is concerned primarily with the development of American culture since the arrival of Europeans. As such, Historical Archaeology partakes of much more than just "digging" and seeks to incorporate the more traditional approaches, such as site excavation, with the examination of documents, architecture and oral history. The result is a much richer, more human image of the City's past.

A number of historical archaeology projects have been conducted in Boston Proper, including several within a few blocks of the 75 State Street Project Area. These nearby projects include work at Long Wharf Parcel D-10 (Bower, et al. 1984), the Bostonian Hotel Site (Bradley 1983), the Wilkinson Backlot Site (Beaudry 1984), and the Sanborn Site (Boros and Mrozowski, personal communication 1985). An examination of previous archaeological work conducted at these sites provided a data base against which to compare the 75 State Street excavations, as well as initially providing predictive information on site integrity and depth of deposits.

The Long Wharf Project Area, Parcel D-10, was located less than two city blocks from the 75 State Street Project Area. Long Wharf, at the end of State Street, provided a focus for activity in Boston Harbor during much of the eighteenth century. Significant archaeological remains were uncovered to a depth of 13.5 ft., including portions of the 1763 section of Long Wharf at a depth of 12 ft. A portion of an earlier wharf was present at 10 ft. Results from borings showed a portion of an 1826 segment of Long Wharf at 7 ft. below the surface of Commerce Street (Bower, et al. 1984). Wharf remains consisted of heavy timbers and planking, revealing construction techniques which differed for the various sections and for different construction episodes (Bower et al. 1984:42-43). A large number of artifacts, as well as faunal and floral remains, were recovered. Many of these dated to the seventeenth and eighteenth centuries.

The Long Wharf Site was significant for many reasons. It was only the second eighteenth-century archaeological site to have been tested within the boundaries of antebellum Boston. Since cultural materials in association with the wharf were buried underwater in clay, they were well preserved. This provided an opportunity to analyze artifacts, such as organic remains (e.g. leather, bone, and seeds) which are seldom preserved in New England sites. Very few wharf or waterfront sites have been examined. Parcel D-10 provided an excellent data base for study of maritime and wharf activities and of construction methods.

During construction of the Bostonian Hotel, located on the corner of North and Blackstone streets across from Quincy Market, staff members of the Massachusetts Historical Commission were allowed to monitor excavations for the hotel's foundations informally. Cultural material was found to depths of between 8 and 14 ft., including both seventeenth-

and eighteenth-century deposits. The deepest archaeological remains occurred in original waterfront areas which were filled prior to the nineteenth century (Bradley 1983).

The Bostonian Hotel Site provided important information on the growth of Boston during its formative period. In particular, data collected at the site added to knowledge about the development of Scottow's Dock, an area which had been overlooked in previous historical works on Boston (Shurtleff 1890; Whitehill 1968).

Mary Beaudry and archaeologists from Boston University conducted excavations in the Wilkinson Backlot. This site was located to the north of the Bostonian Hotel, some four to six blocks from the 75 State Street Project Area. At the Wilkinson Backlot Site, an intact seventeenth-century saw pit was uncovered. The feature extended to a depth of approximately 8 ft. In addition, several small drainage features were located.

Concurrently with the test excavations at the 75 State Street site, another team of archaeologists was examining subsurface archaeological potential only one block away. Laurie Boros and Stephen Mrozowski (1985, personal communication) excavated the Sanborn Site, located on the northwest corner of the intersection of Chatham Street and Merchants Row, near Faneuil Hall and Quincy Market. The foundation of the Old Fish Market building was underlain by sterile wet clay at a depth of approximately twelve ft. Several truncated features, described as areas of darker soil containing a low density of cultural material, were located adjacent to the foundation. These appeared to be small pockets of surviving land surface cut through by the construction of the foundation.

V FIELD TESTING

A. Engineering Test Borings

As part of the reconnaissance survey, the expected integrity of the project area was analyzed by examining the boring logs and boring samples taken for Haley and Aldrich, Inc., reviewing building permits, and on-site inspection of basements and surface conditions. Joel Mooney of Haley and Aldrich was particularly helpful in providing information and interpretation of the geological information. Figure V-1 shows an elevation of State Street looking south. The information from the borings indicated the depth of fill deposits, which for the present analysis will be assumed to be the depth of Historic Period deposits. This, of course, did not take into account any early features such as post holes, wells, privies and pits, which could have been excavated into subsoil. Existing basement depths indicated the depth of disturbance on a site.

1. 73-75 State Street

Boring 1, taken in the parking lot at the corner of State and Kilby, showed fill to a depth of 9.5 ft. (Fig. V-1). Sample 2, taken from 5 to 7 ft., contained some glass and wood fragments that were too small for diagnosis. Historic photographs of the 75 State Street Building showed that it had a sidewalk entrance to the basement, similar to the corner entrance of the Exchange Building across the street. The Exchange Building basement had a maximum depth of 6 ft. below street grade at the corner. It is possible that the basement and foundation of 73-75 State Street did not fully impact earlier archaeological deposits. It was recommended that archaeologists supervise the excavation of a test trench in this area in order to evaluate the site's integrity (Fig. V-2, trench 1). This test pit was so located as to intersect foundations of early buildings on State Street.

A 36-in. auger hole was sited in the parking lot of 73-75 State Street after the reconnaissance report and before the intensive survey. This activity confirmed the greatly disturbed nature of this part of the site down to the blue clay base. Rubble, including tires and a safe, was recovered from just above a granite block flooring. This flooring was laid on the blue clay base.

2. 99 State Street

The five-story brick building at 99 State Street had only an 8-ft.-deep basement. This basement may date to the previous structure on the site. Boring 5, taken across Doane Street, contained fill to 9.5 ft., and Sample 3 taken from 9.5 to 11.5 ft., contained several remnants of wooden wharf piling and the fill continued to 13.5 ft. This suggested that 75 State Street sits on filled land and that there might be archaeologically significant remains under the cellar.

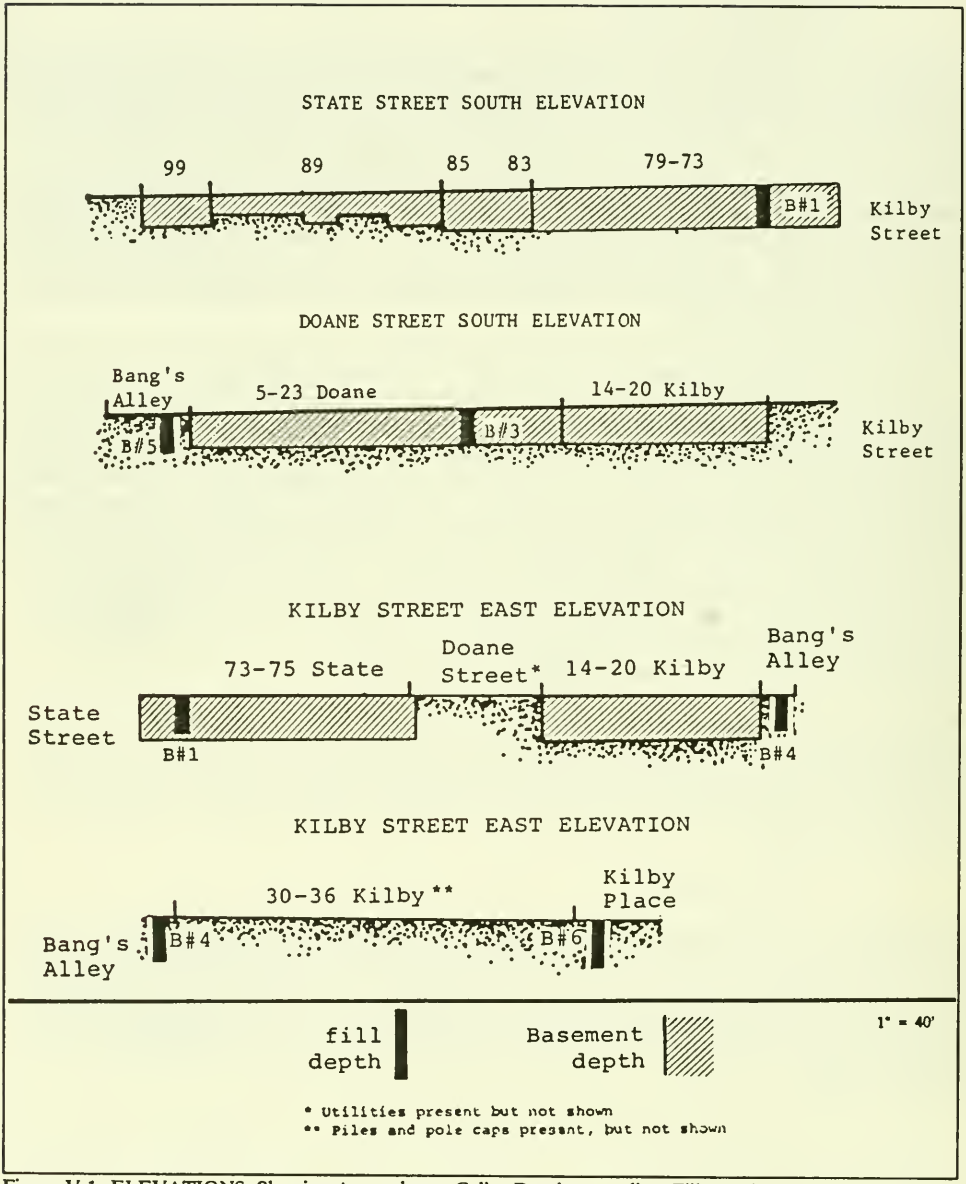


Figure V-1 ELEVATIONS, Showing Approximate Cellar Depths as well as Fill Depths Derived from Boring Data

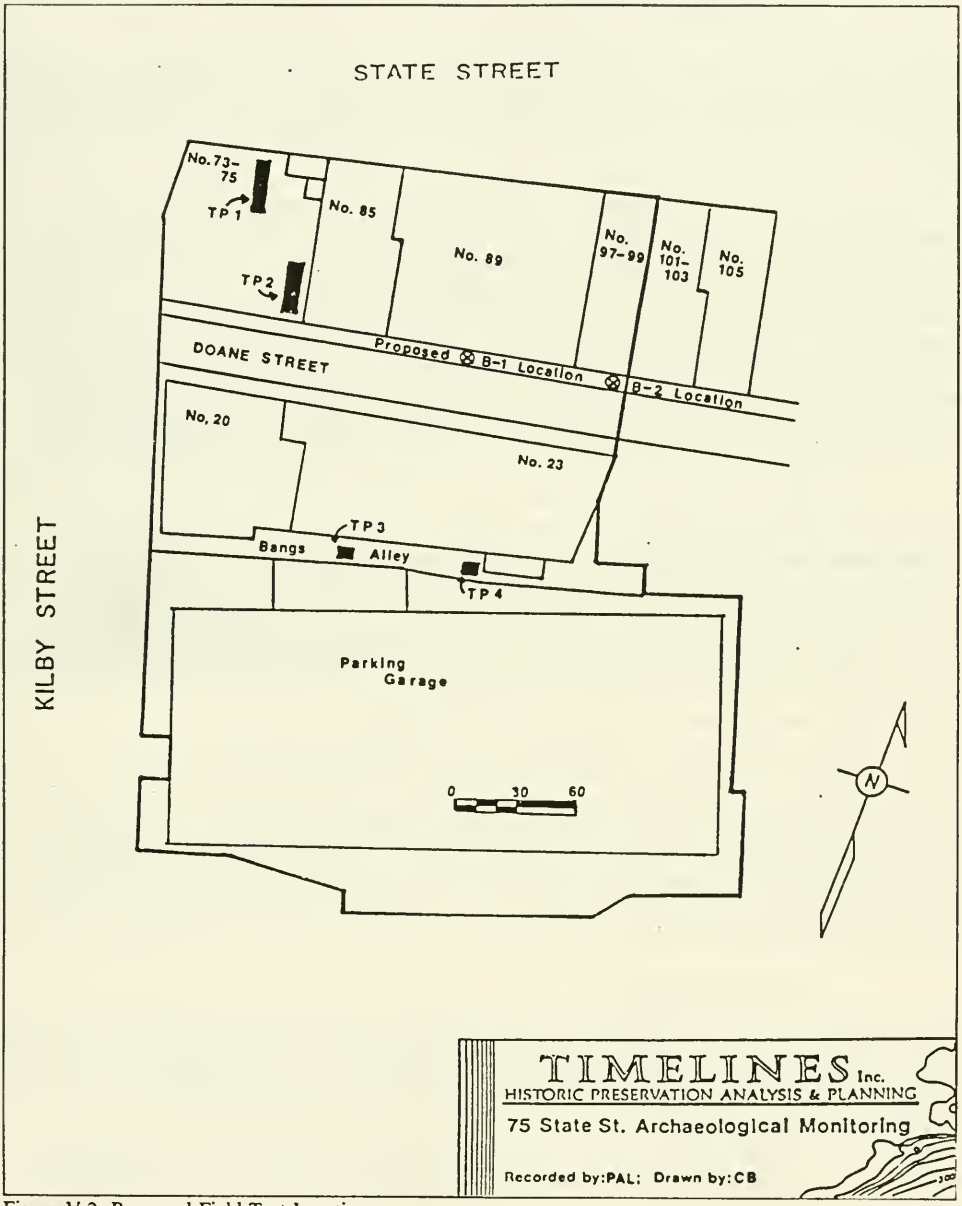


Figure V-2 Proposed Field Test Locations

3. 5 Doane Street

Number 5 Doane Street was constructed in 1922. The building was constructed onto what appears to be a natural grade sloping east and south from Kilby Street. The lowest point was at the southeast corner of the building at the elbow of Bang's Alley. The difference in grade between Doane Street and the elbow was approximately 4.5 ft. The grade difference between the west end of the building on Doane Street and the east end appeared to be at least 2 ft. The cellar depth was approximately 10 ft. at the northwest end of the building. Bang's Alley, which ran south and east of the building, started at least 3 ft. below Kilby Street and appeared to be at its nineteenth-century grade (Fig. V-1). The 10-foot basement depth had probably destroyed any earlier archaeological resources. However, Boring 5, taken at the corner of Doane Street and Bang's Alley, found fill and wharf deposits to 13.5 ft., suggesting that the fill deposits slope to the south as well. Two hand-excavated test pits were sited in Bang's Alley in order to determine the depth of archaeological deposits and their integrity (Fig. V-2, trenches 3 and 4). Doane Street was originally a 10-ft.-wide street leading to Peck's Wharf in the early eighteenth century. If remained possible that earlier well and privy deposits existed under the street, as well as remnants of earlier foundations.

The parking garage at 30-36 Kilby Street had no cellar. However, plans from the construction of the parking garage were not available, so there was little information on how pilings or other foundations might have impacted the site. Boring 4, taken at the northwest corner of the garage, uncovered fill deposits to 9 ft. below grade (Fig. V-1). Boring 6, taken at the southwest corner of the site, had fill deposits to 10.5 ft. below grade (Fig. V-1). Before the parking garage, the lot contained two commercial buildings split by Central Street. The Central Street portion of the site was the most likely to contain intact deposits because it was probably not built on after 1760. However, the elevator system of the garage may have impacted this area, as well as pre-1968 utilities.

B. Intensive Survey - by The Public Archaeology Laboratory, Inc.

Timelines subcontracted the Intensive Archaeological Survey component of this project to The Public Archaeology Laboratory Inc. (PAL) of Pawtucket, R. I. PAL, supervised by Timelines, performed this work under Permit No. 723 issued by the Massachusetts Historic Commission and jointly signed by Brona Simon, State Archaeologist, and Stephen Pendery, Boston City Archaeologist.

1. Field Methodology

Archaeological sampling strategies were designed to maximize data recovery while minimizing the amount of testing required. Examination of sites located within large developed urban environments, such as Boston, requires careful planning and selection of techniques and test locations.

On a used and reused urban site, such as the 75 State Street Project Area, previous construction activities, structures, structural features, and utilities must all be considered

when developing a sampling strategy. The area available for testing was severely obstructed due to the presence of numerous standing buildings and their associated cellars, both active and filled, and the locations of utilities and utility trenches. Judgmental locations were selected on the basis of historical documentation from the background research in combination with data on construction history and building specifications for the project area.

The methodology proposed for conducting this examination of site integrity included a threefold combination of techniques. The three methods of proposed site examination were hand-dug test pits, machine-dug test trenches and deep auger tests, and split-spoon core samples. Choice of these techniques was based upon the expected below-ground condition of different portions of the 75 State Street Project Area. Machine units were considered necessary to remove expected rubble fill and basement flooring beneath 73-79 State Street. The narrow width of Bang's Alley precluded the use of machinery there, so hand units were proposed. Split-spoon cores were considered as the best testing strategy in Doane Street to avoid closing the street to traffic (Fig. V-2). This proposed methodology was followed as closely as possible in the field. A few minor adjustments were made to the final location of units. No test unit or boring was moved more than a few feet from its proposed location (Fig. V-3).

Two shovel test pits were recommended in order to determine the nature of deposits in Bang's Alley and below 30-36 Kilby Street and 5 Doane Street. Units were to be 1 m. x 1 m. test pits, and were not expected to exceed 5 ft. in depth. Cultural material from each unit was professionally documented and collected materials were processed in the laboratory. As per these specifications, two test pits were excavated in Bang's Alley (Fig. V-3).

Two test trenches were recommended for the purpose of examining the integrity of 73-79 State Street. Each trench was to be 10 ft. long and the width of a standard back-hoe bucket to a depth below so-called fill layers. In practice, two test trenches were excavated (Fig. V-3) with dimensions slightly greater than those specified. The first (TP 1) was located over the former cellar of 73-75 State Street. It was excavated by back-hoe through the cellar fill and into the underlying clay. A large platform drill was then used to make auger borings to a greater depth. The second (TP 2) was placed over the cellars of 77-79 State Street. This unit was excavated with a back-hoe to the water level at the base of the cellar foundation.

Two borings were recommended in order to test the integrity of deposits under 89 and 99 State Street. Borings were to be made with a 2½-in. diameter split-spoon coring tool to a depth between 10 and 15 ft. below ground surface into the underlying sterile clay. Cores were to be collected and examined in the laboratory. This procedure was accomplished as prescribed, with a slight adjustment in the locations of the borings. Both cores were moved a few feet from the buildings and located in Doane Street rather than being drilled through the sidewalk. This was done to avoid the coal cellars jutting out from the cellars under the sidewalk.

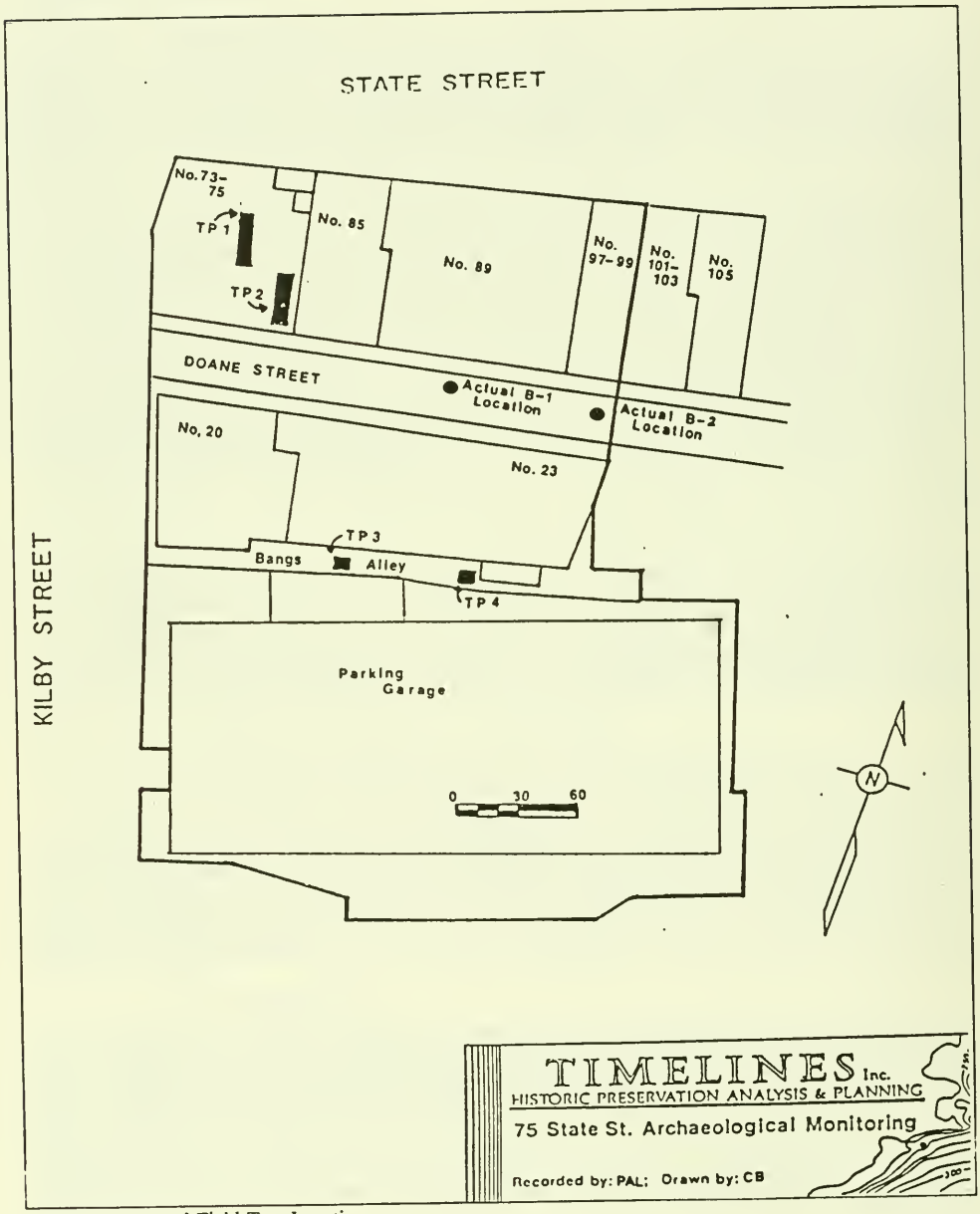


Figure V-3 Actual Field Test Locations

2. Testing Results

The two borings in Doane Street (B 1 and B 2) provided an overview of the stratigraphy of the 75 State Street Project Area. This general picture was then supplemented with more specific information from the profiles seen in the machine and hand units. The auger logs and test pit profiles are shown in Figures V-4 and V-5.

Borings 1 and 2 showed virtually identical profiles. The initial layer (0 - 2.5 ft.) consisted of dark gray coarse sand and gravel fill. In both borings, this fill contained brick and mortar fragments. The fill in B 1 held a few fragments of coal or cinders as well. In B 2 the fill also revealed two shell fragments and a single sherd of hard white ceramic. This dark fill layer was above approximately 3.5 ft. of gray-green clay containing brick and charcoal flecks. Beneath this was a layer of olive-green clay about 1.5 ft. thick. This clay contained brick and wood flecks, and in B 2 a single bone fragment was noted. From approximately 9 ft. to the base of each core (B 1 at 13 ft., B 2 at 15 ft.) the profile indicated blue-gray clay (Fig. V-4). This clay contained wood flecks in B 1, but was sterile in B 2. The cores from the two borings differed mainly in the greater abundance of small wood flecks in the blue-gray clay between 9 and 15 ft. No obstructions were encountered in either boring, and very little cultural material was recovered.

The cores from the two borings were virtually identical, with the single exception of the greater abundance of small wood flecks in the blue-gray clay from 9 to 15 ft.. No obstructions were encountered in either boring, and very little cultural material was recovered.

The results of these two borings were very similar to the auger cores done previously by the Haley and Aldrich geologists. Their stratigraphic profiles showed from 8 to 15 ft. of miscellaneous fill lying above a series of varicolored clays. Immediately below the fill in most borings the geologists found a yellow-brown silty clay. Only two borings near the corner of State and Kilby streets did not show this clay in the profile. The yellow-brown silty clay was underlain by gray silty clay. This corresponded reasonably well with what was observed in the borings and in monitoring of TP 1.

The results of these borings differed from the results of similar borings done at Long Wharf (Bower et al. 1984). The Long Wharf borings recovered evidence of solid wooden timbers, pilings and wharfing members, as well as evidence of clay fill with brick and wood debris at a greater depth than in the 75 State Street cores. In addition, the Long Wharf cores, those which were not obstructed, encountered a "gray clay with many shells," presumably evidence of the previous harbor bottom. The cores taken from the 75 State Street Project Area did not produce any substantial evidence of wharfing or of harbor bottom, such as heavy timbers or shell-laden clays.

The first machine trench (TP 1) was excavated through the rubble-filled cellar of 73-75 State Street. The cellar flooring, large cut-granite blocks over a poured-concrete slab base at 9.5 ft., rested on wet sterile clays (Fig. V-6). No artifactual materials were encountered

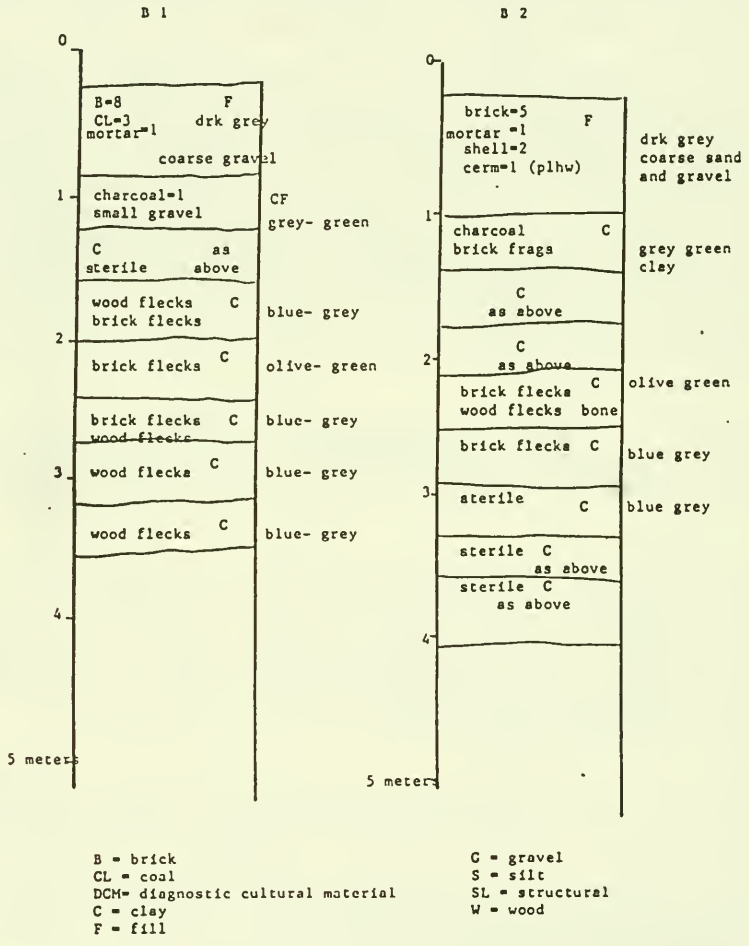


Figure V-4 Profiles of Borings 1 and 2 from 75 State Street Project Area

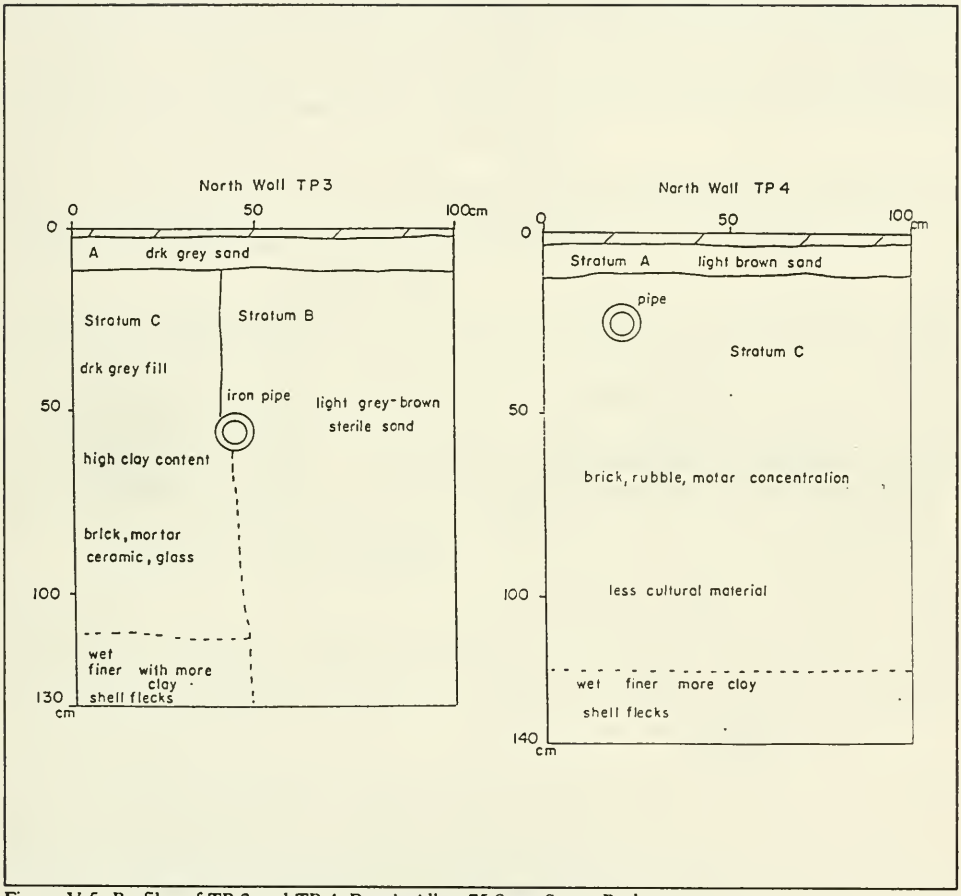


Figure V-5 Profiles of TP 3 and TP 4, Bang's Alley, 75 State Street Project

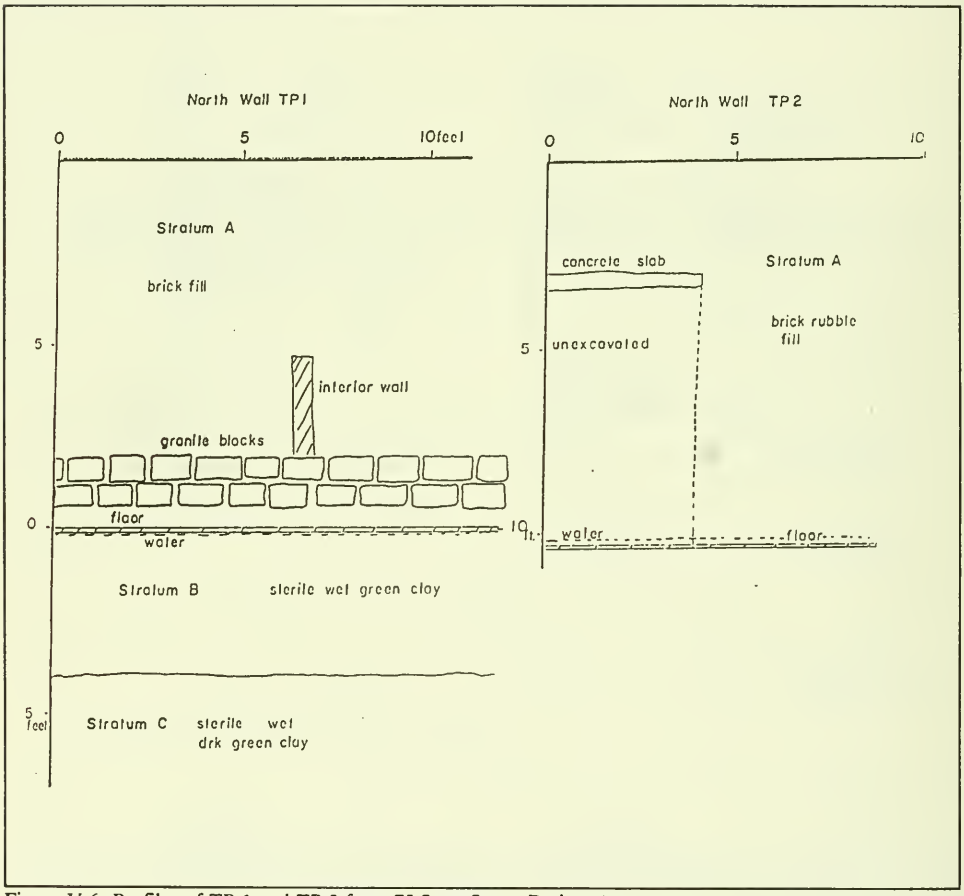


Figure V-6 Profiles of TP 1 and TP 2 from 75 State Street Project Area

other than the relatively recent debris in the cellar fill. The back wall of the building was noted approximately 20 ft. north of Doane Street, as shown on plans of the block. Based on the monitoring of this excavation it was apparent that any archaeological remains had been destroyed in later building construction.

Excavation of TP 2, located behind the 73-79 State Street buildings on Doane Street, revealed that this area, like that to the north in TP 1, had been severely impacted by cellar construction. This cellar also extended to a depth of approximately 9.5 ft. (Fig. V-6). It appeared to cover most, if not all, of the space between the cellar under 73-79 State Street and Doane Street. No archaeological resources appear to have survived the construction activities in this portion of the 75 State Street Block.

Both TP 3 and TP 4 were excavated by hand in Bang's Alley (Fig. V-3). The two units revealed very similar data concerning the deposits lying under this passageway. Both test pits were excavated to an approximate depth of five ft.

Immediately beneath the asphalt surface in TP 3 was a shallow layer of dark gray compact fill (Stratum A). Underlying Stratum A the unit was divided into Stratum B, the east half, and Stratum C, the west half of the unit (Fig. V-5). Stratum B was a sterile light brown sand, most likely filled in after construction of the adjacent parking garage. It continued unchanged to the base of the unit. Stratum C was a dark brown fill containing a low density of cultural material (Fig. V-5). A 4-in. diameter "water" pipe runs through the unit on the line between Stratum B and C. This utility trench did not appear on the blueprints of the block. Stratum C is probably a utility trench fill dating to the late nineteenth century that was cut into by the parking garage builder's trench.

The stratigraphy of TP 4 was similar to that of TP 3, with the exception that no Stratum B sterile sand was encountered. As in TP 3, the asphalt surface was underlain by a compact dark gray fill, Stratum A (Fig. V-5). Beneath this fill was Stratum C, a dark brown fill containing a low density of cultural material (Fig. V-5), identical to Stratum C in TP 3. The same "water" line ran through this unit. TP 4 appeared to have been further disturbed by construction of the building adjoining it on the west, 5 Doane Street, as several large conglomerations of bricks and mortar were found near the west edge of the unit.

Very little cultural material was found during the excavations and monitoring at the 75 State Street site. The split-spoon core samples yielded virtually sterile clay beneath the upper 10 ft. of fill. This upper fill layer contained fragments of brick, mortar, coal, and wood, but no diagnostic artifacts, with the exception of a single sherd of hard white earthenware (Fig. V-4). The machine units (TP 1 and TP 2) revealed substantial brick, mortar, granite, and utility remains in the cellar fill. However, beneath the cellar foundation only sterile clays were encountered (Fig. V-6). No artifacts were collected from these two units.

The only cultural material of consequence recovered from the 75 State Street site was collected from TP 3 and TP 4 in Bang's Alley (Fig. V-5). The majority of these artifacts were structural materials (i.e., brick and mortar fragments) or metal (i.e., nails, bolts, and

washers) (Figs. V-7 and -8). All of these artifacts were found in Stratum C, a dark brown fill associated with a 4-in. diameter "water" pipe. They appeared to be in a disturbed context and therefore offered little in the way of meaningful data for analysis.

Boston areas such as the project location are among those with the greatest potential for prehistoric sites to survive. Here there is evidence for extensive land-filling activities that buried the original shoreline and estuarine margins, prime site locations. While the presence of a prehistoric site on the 75 State Street property was considered to be improbable, precautions were taken to recover any prehistoric remains that might be found. No such cultural material was located during the course of the archaeological testing or monitoring.

The 75 State Street Project Area has been near the center of activity in Boston since the first European settlement on the Shawmut Peninsula in 1630. It was hoped that archaeological resources remaining beneath and/or between the buildings and utilities would shed light on a number of block-specific historic questions and research issues. Analysis of intact archaeological deposits from the site could then be used to increase the existing data base in order to provide data for comparisons with historical and with other archaeological reports on the development, growth, and history of this part of the city.

Among the research issues to be addressed were: 1) comparisons with other mid-seventeenth-century deposits recovered in Charlestown; 2) comparisons with and across social classes through time; 3) effects of increased urbanization and the 1740s depression on different crafts and classes; 4) effects of the series of fires on post-fire structures, lot plans, character of the inhabitants, and types of activities on the site; 5) effects of the British occupation and siege of Boston on the port economy and the waterfront areas; and 6) changes occurring as the area was filled and wharfed out, no longer situated on the immediate waterfront.

Nineteenth and twentieth century construction activities on the 75 State Street block have effectively eliminated or severely impacted the potential for archaeological resource recovery. This was demonstrated in the testing of the 73-79 State Street parcel examined in TP 1 and 2, and also in TP 3 and 4 in Bang's Alley. The fill examined in the alley units was typical of disturbed urban fill. It was possible that undisturbed deposits lay beneath this utility trench fill. However, because of the limited space between the buildings, it would have been isolated from any structural or other meaningful associations.

On the basis of the nearly nonexistent archaeological remains recovered in the testing program, it was impossible to address any of the research questions outlined above.

Table 1: Cultural Material from TP 3, 99 State Street Project, Boston

	TP 3 Levels:							
	3	*4*	*5*	*6*	*7*	*8*	*9*	*10*
Ceramic								
Redware	0	0	0	0	1	0	0	1
Buff-bodied Earthenware	0	0	0	0	0	0	0	0
Creamware	0	0	0	1	0	1	1	1
Pearlware	0	0	0	0	2	0	0	1
Yellow Ware	2	0	0	0	0	0	0	0
Rockingham	0	0	0	0	2	0	0	0
Hard White	0	1	0	0	0	0	0	0
Porcelain	1	0	0	0	0	0	0	0
Glass								
Bottle	4	0	0	0	0	0	0	2
Other Vessel	0	0	0	0	0	0	0	0
Window	0	0	0	0	3	0	1	0
Clay Pipe								
Bowl Fragment	0	0	1	0	1	0	0	0
Stem	0	0	0	0	0	0	0	1
Structural								
Brick	2	2	1	1	2	2	2	3
Mortar	2	2	3	1	2	2	1	1
Metal								
Lead Object	0	0	0	0	0	0	0	0
Iron Bolt	0	0	0	0	0	0	0	0
Iron Nails -- unident.	0	0	1	0	1	0	0	0
wire	0	0	0	0	0	0	0	0
Unident. Object	0	0	0	0	1	0	0	0
Washer	0	0	0	0	0	0	0	0
Faunal								
Shell	0	0	1	5	5	6	14	5
Bone	0	1	0	0	0	0	0	0
Coal	0	0	1	0	0	0	0	0
Slag/Clinker	0	0	0	0	0	0	0	0
Electrical Insulator	0	0	0	0	0	0	0	0

Figure V-7 Table of Cultural Material from TP-3

Table 2: Cultural Material from TP 4, 99 State Street Project, Boston

	TP 4 Levels: 1	2	3	4	5	6	7	8	9
Ceramic									
Redware	0	0	0	0	0	0	1	0	0
Buff-bodied Earthenware	1	0	0	0	0	0	0	0	0
Creamware	0	0	0	0	0	0	0	0	0
Pearlware	0	0	0	0	0	0	0	0	0
Yellow Ware	0	0	0	0	0	0	0	0	0
Rockingham	0	0	0	0	0	0	0	0	0
Hard White	3	2	1	0	0	0	0	0	0
Porcelain	0	0	0	0	0	0	0	0	0
Glass									
Bottle	2	1	0	0	0	0	0	0	0
Other Vessel	0	0	0	0	0	0	0	0	0
Window	0	0	0	0	0	0	0	0	0
Clay Pipe									
Bowl Fragment	0	0	0	0	0	0	0	0	0
Stem	1	1	1	0	0	0	0	0	0
Structural									
Brick	1	1	0	7	6	4	3	3	1
Mortar	0	1	0	2	0	2	1	2	1
Metal									
Lead Object	0	0	0	0	0	0	0	1	0
Iron Bolt	2	0	0	1	0	0	1	0	0
Iron Nails -- unident.	0	0	2	0	0	0	0	0	0
wire	3	1	0	0	0	0	0	0	0
Unident. Object	0	0	0	0	0	0	0	0	0
Washer	1	0	0	0	0	0	0	0	0
Faunal									
Shell	0	3	0	0	1	0	0	0	0
Bone	0	0	0	0	0	0	0	0	0
Coal	0	1	0	0	0	0	1	0	0
Slag/Clinker	0	0	0	0	0	1	0	1	0
Electrical Insulator	0	0	1	0	0	0	0	0	0

Figure V-8 Table of Cultural Material from TP 4

C. Analysis of Testing Program

In consideration of the fact that initial testing did not reveal the presence of pristine or undisturbed archaeological resources, no further archaeological excavations were recommended in areas already tested. Archaeologists recommended monitoring of additional units scheduled to be excavated by the engineering contractors around the perimeter and across the site. They also proposed the monitoring of additional testing activities by the construction contractor, engineers, and/or geologists. These included:

* proposed test trenching to examine existing building foundations;
* proposed cores in and around the project site;
* pre-excavation required to facilitate the construction of a perimeter slurry wall;
* utility relocation in Doane Street; and
* trenches that might be placed within existing cellars after demolition and prior to excavation.

The archaeological consultants worked with the engineers and contractor to integrate archaeological testing and evaluation sufficient to identify resources existing on the site.

D. Additional Borings and Test Pitting

Two reports were submitted to Skidmore, Owings, & Merrill in the pre-construction phases of the project. These reports were:

1. Reconnaissance Archaeological Study for the 99 State Street Project (now 75 State Street) by Bower and Roberts

2. 75 State Street Intensive Survey Report by King and Gallagher.

With the working hypothesis (demonstrated in numerous other studies) that the "miscellaneous fill" as described in the Haley and Aldrich report (page 21) represented the culture-bearing component of the site, it was clear that the identification of the base of this fill defined the limit of the area in which potentially significant cultural resources could exist.

Drawing on previous work, both archaeological and geotechnical, in and around the project area, Bower and Roberts (page 27) predicted the fill deposits to reach a depth of 8 to 14 ft., sloping toward the current waterfront and slightly to the south. These predictions were borne out by King and Gallagher after viewing machine-excavated test trenches (pages 27 and 28), archaeologically controlled geotechnical borings (pages 25, 26, and 27), and hand-excavated test pits (pages 28 and 29).

The analysis of data within these reports allowed for an assessment of the integrity of the resources expected to have been on the site. The results of this analysis were reflected in

Exhibit IV C-6 of the Final Environmental Impact Report (FEIR) (Fig. V-9). This figure shows areas totally disturbed, partially disturbed (resources expected to be truncated due to cellar and utility construction), and areas whose degree of disturbance is unknown.

In this figure, the area under 30-36 Kilby Street (the Kilby Street Garage) was designated unknown since the proponents and the archaeological consultants were unable to obtain construction drawings of the garage. In addition, the exact cellar depth of the Liberty Building (the site's former occupant) could only be guessed at.

Subsequent to the submission of the above-mentioned reports, additional pre-construction geotechnical tests were conducted. These tests consisted of additional borings and test pits for foundation inspection (Fig. V-10). Archaeologists monitored the inspection test pits and reviewed the boring logs in order further to analyze the nature of the subsurface condition.

Figure V-11 is a composite of all borings and test pits done for geotechnical purposes (Haley & Aldrich 1986). Fig. V-12 shows profiles useful for analysis of the 30-36 Kilby Street subsurface condition.

Complementing the borings were the test pits excavated for the purpose of inspecting certain building foundations. These test pits revealed little regarding the existence of intact resources except for TP 9 and TP 10. Pieces of wharfing were noticed in these test pits exactly where they had been predicted by the earlier studies.

A surprising finding is illustrated in the profiles--the fact that a 10-foot void existed beneath the Kilby Street Garage. Figure V-13 is the result of subtracting this 10 ft. from the total depth to fill base from the surface. The result is an illustration of the depth of remaining culture-bearing deposit under the Kilby Street Garage (Fig. V-14).

E. Analysis

Analysis of the subsurface testing modified the graphic presented in the FEIR as Exhibit IV G-6. All the area under the Kilby Street Garage identified there as "disturbance unknown" was later identified as "partial disturbance." This means that resources within this zone were truncated with probable disruption of the fabric and associations of most.

With reference to the Framework for Evaluation in the Reconnaissance Report (Bower and Roberts 1985:17), we can now evaluate the resource potential for the areas under the Kilby Street Garage not previously considered.

1. Comparative Data

The acquisition of comparative data requires significant amounts of intact resources in a relatively pristine condition. Given the truncated nature of the entire project area, we did not expect significant resources within this category except for elements of the wharf structures.

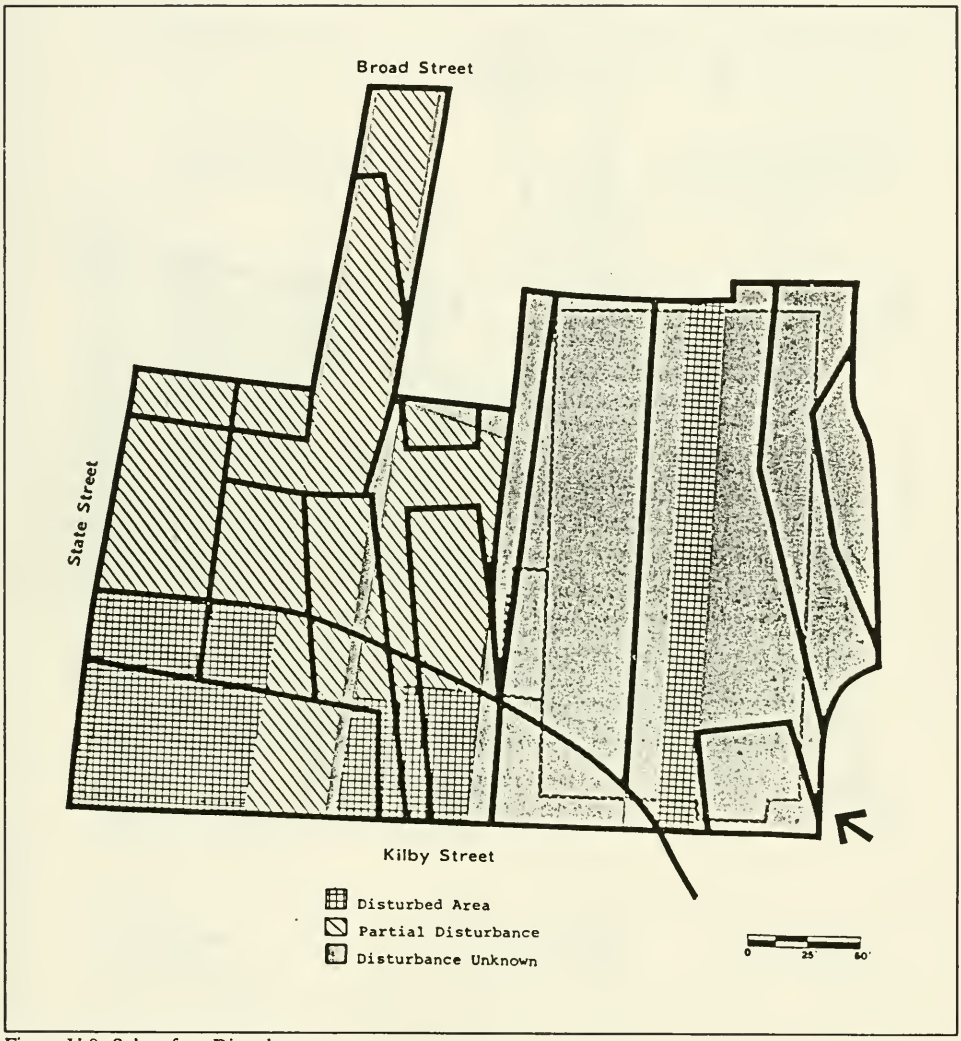


Figure V-9 Subsurface Disturbance

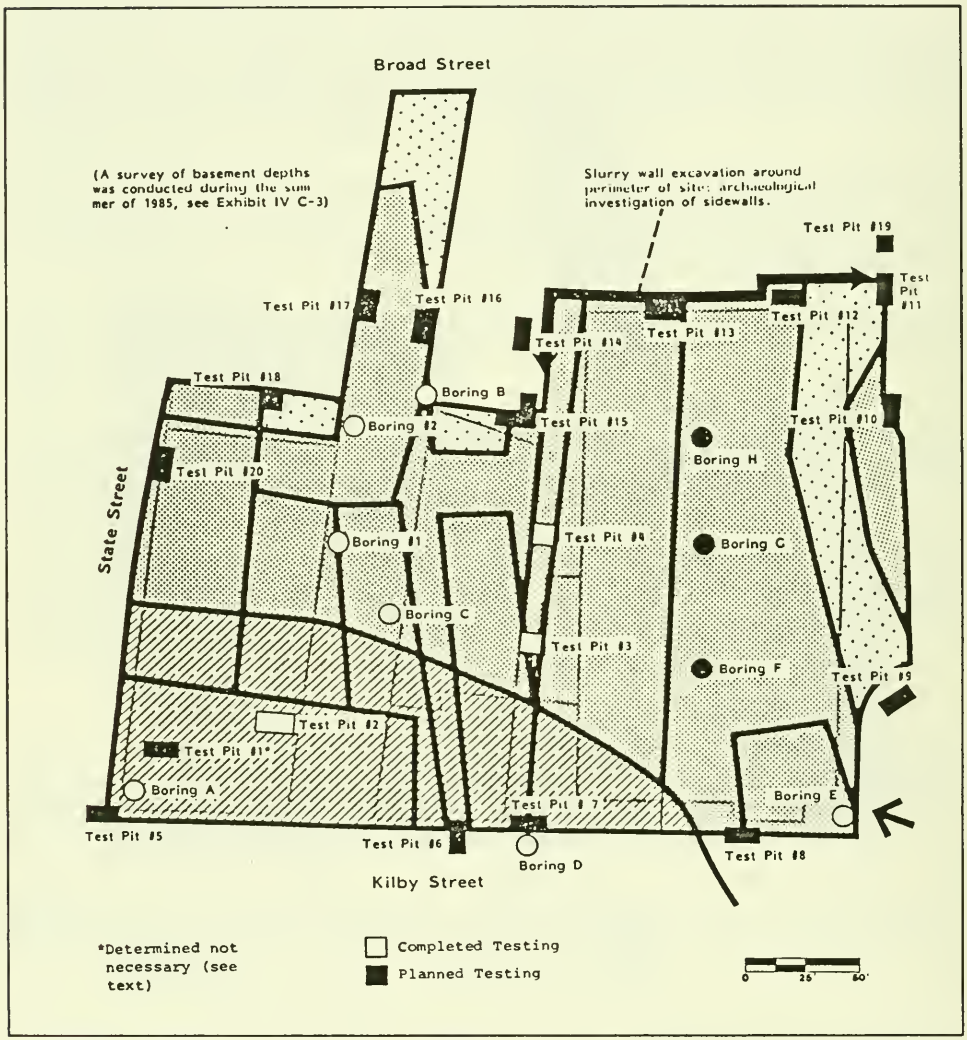


Figure V-10 Boring, Hand Test, and Backhoe Test Unit Locations

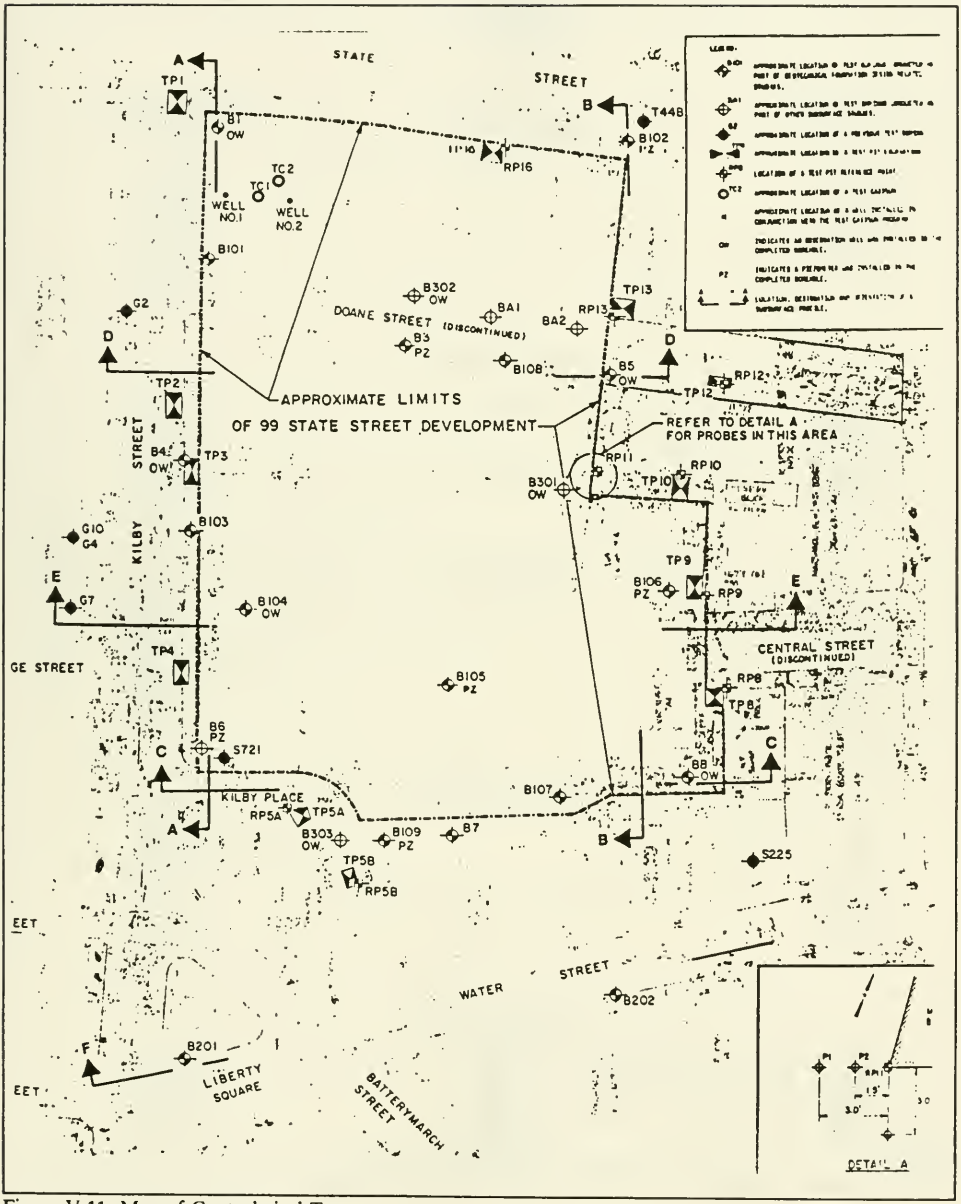


Figure V-11 Map of Geotechnical Tests

PROFILE A-A

Boring No.	Depth of Void	Depth of Fill
s721		15.0 ft.
B6		10.5 ft.
B104	9 ft.	14.0 ft.
B103		12.0 ft.
B4		9.0 ft.
G2		17.0 ft.

PROFILE B-B

s225	12 ft.	18.0 ft.
B107		13.6 ft.
B8		15.0 ft.
B106	10 ft.	15.0 ft.
B5		13.5 ft.

PROFILE C-C

B6		10.5 ft.
B109		17.0 ft.
B7		13.5 ft.
B107		13.5 ft.
B8		15.0 ft.

PROFILE D-D

G2		17.0 ft.
B4		9.0 ft.
B3		10.0 ft.
B108		11.0 ft.
B5		13.5 ft.

PROFILE E-E

G7		11.0 ft.
B104	10 ft.	14.0 ft.
B105	10 ft.	16.5 ft.
B106	10 ft.	15.0 ft.

Figure V-12 - Profiles Relating to 30-36 Kilby Street Subsurface Conditions

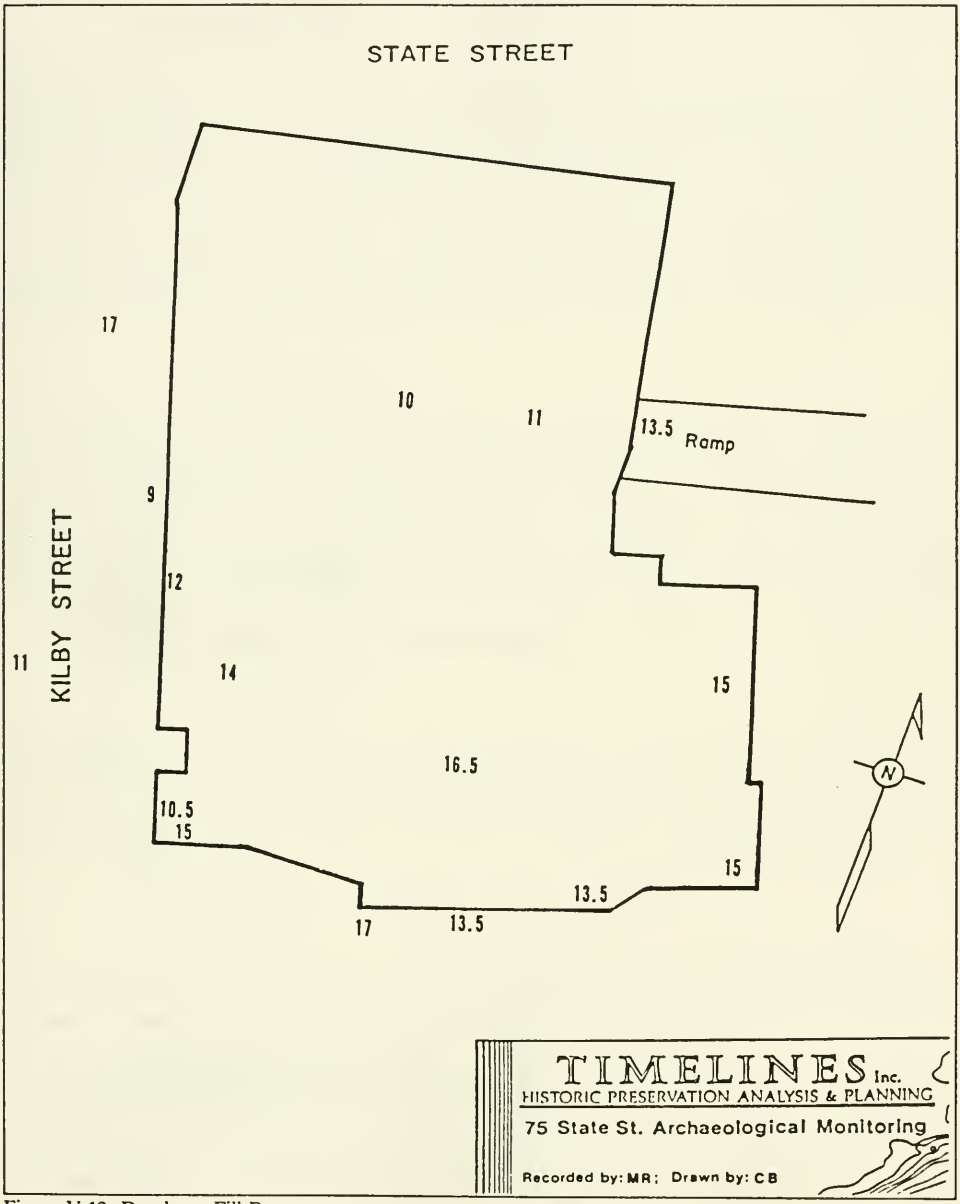


Figure V-13 Depths to Fill Base

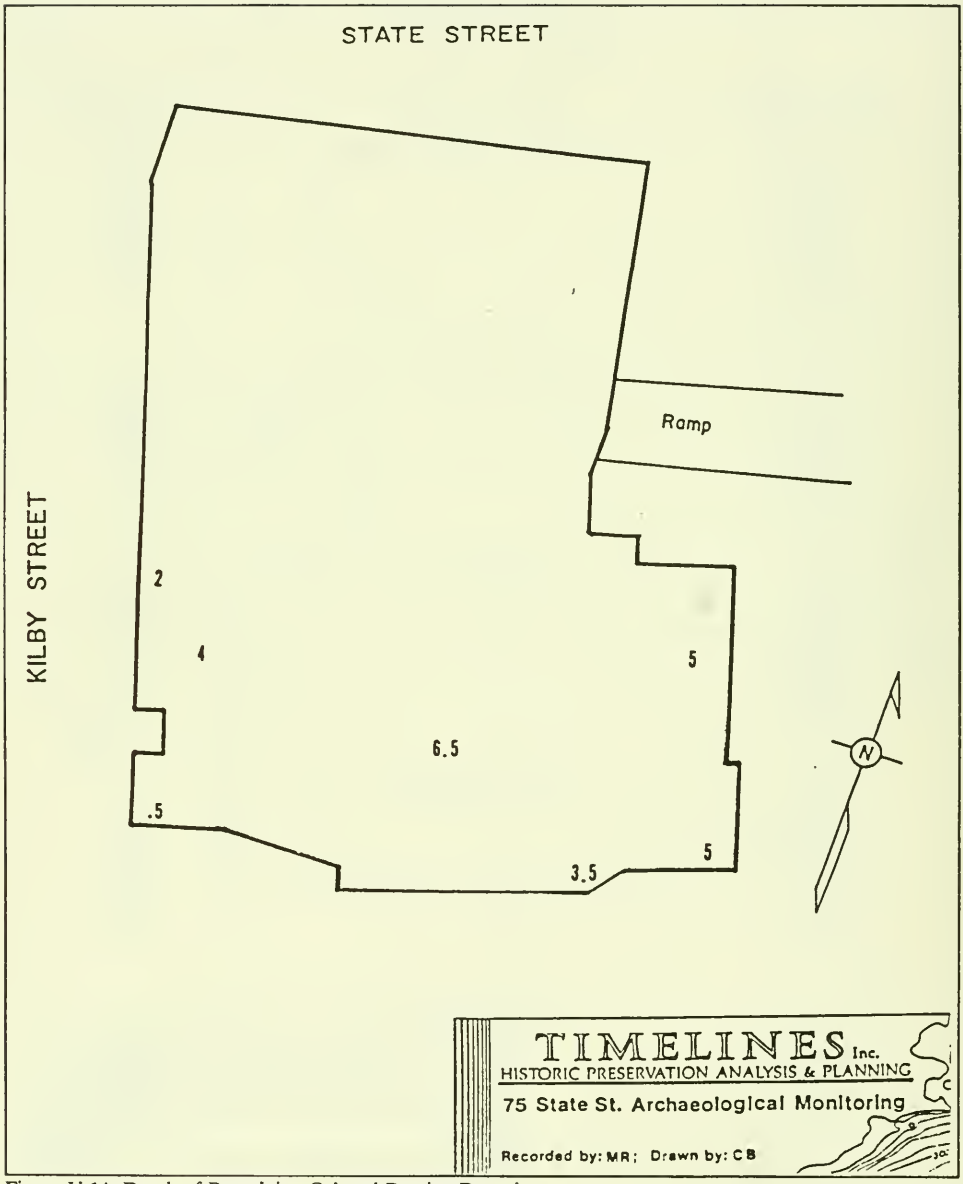


Figure V-14 Depth of Remaining Cultural-Bearing Deposit

2. Corroborative Data

The acquisition of corroborative data requires a notion of the nature and distribution of resources within the site. Data may still be gathered even if the resources are truncated or otherwise modified. The resource class in this category that had the greatest likelihood of still contributing to our understanding of the history of the site and its place in Boston's history was wharfing. Studies in the D-10 parcel by Bower (1984) gained some insight into wharf construction, but funding constraints limited mapping of the feature. Mapping of the remaining components of existing wharfs within the site were intended to corroborate conclusions drawn by others about Colonial Boston's waterfront. The massive 10- to 12-in. beam located in TP 9 and other possible wharfing components from TP 10 may well be elements of Poole's Wharf (ca. 1700).

3. New Data

The acquisition of new data requires relatively small samples of material. At the same time, any new data at this site were expected to represent the Prehistoric, Contact, and Colonial Agricultural/Residential periods. These data, if they existed, could be expected to be thinly scattered and subject to easy loss of integrity through disturbance. The discovery of such material would be extremely significant. However, on this site we expected new data to exist only on undisturbed portions of the original land surface as shown in Fig. V-9. Undisturbed areas, for this purpose, were those where any fill was left over the clay base.

F. Recommendations Resulting from Testing

1. Pre-construction

The slurry wall to be excavated prior to construction was recommended to be examined by archaeologists where it would cross Doane Street along Kilby Street and in the portion of the zone of possible new data next to the Kilby Street Garage. If new data were discovered, a plan for recovery of these data would have been developed and coordinated with the construction schedule.

2. Construction

Within the zone of partial disturbance, we recommended the photographing and mapping of elements of wharfing encountered during construction. Nonarchaeologists may perform this task if overseen by a professional familiar with wharf construction.

It was possible that intact features other than wharfs would be encountered within the site during the construction process. While they might not have been significant in terms of the State Historic Preservation Plan, they might have been of interest to the proponent for possible interpretive purposes as a part of the development. We recommended that the proponent request inspection by the MHC if such a feature was encountered, and develop a recovery plan coordinated with the construction process as appropriate.

VI SUMMARY OF THE RESEARCH AND TESTING PROGRAM

Research conducted in the first phases of the project indicated that the site was actively utilized as early as 1630, and continued to be a prominent commercial district throughout its subsequent development. Fill depths and cellar depths were determined in order to help establish locations where resources remained undisturbed. Past activities on-site that had disturbed archaeological deposits included cellar construction, the emplacement of foundation structures, and the installation of utilities.

Subsurface testing has included shovel test pits, borings and test trenches that were located on the basis of historical research. This testing indicated that significant disruption of a large portion of the site has occurred, due primarily to the construction of basements to depths that approached or exceeded the depth of fill on site. No significant archaeological resources were discovered as a result of these subsurface tests.

Archaeological investigation of the site prior to construction was structured as a four-phase program (described in following sections).

Phase I: Site Reconnaissance

Phase II: Pre-Demolition Testing

Phase III: Further Pre-Demolition Testing

Phase IV: Post-Demolition Investigation

A. Phase I: Site Reconnaissance

This phase of work was conducted during the summer of 1985, and was reported on in the Draft EIR, submitted in August, 1985.

1. Step 1 - Documentary Research

A detailed history of land use at the project location was necessary to identify the types of resources that might still exist within the site. This was accomplished by consulting key primary and secondary documents located at a number of institutions and public agencies in the Greater Boston area. Historic Period maps were consulted and analyzed to determine the location and nature of buildings at several key points in the site's developmental history. These maps and the results of research at several city agencies made it possible to assess past disturbance that would have destroyed earlier cultural resources. This resulted in documentation that identified the locations within the site where intact archaeological resources were expected to remain.

Information sources regarding the history of the site were located at a number of local and regional repositories and were investigated by the Project Historian. They included maps, documents, and other materials at the Bostonian Society, State Library, Society for the

Preservation of New England Antiquities (SPNEA), and Massachusetts Historical Society. As a result of this effort, a detailed history of the site was prepared.

2. Step 2 - Analysis of Cellar Depth and Fill Depth

The goal of this step was to describe the loss of evidence concerning past land use as a result of destructive episodes during the site's history. Documentation of destruction to past land surfaces took the form of building permits (which date specific buildings and imply cellar depth, stabilization methods, etc.), examination of actual cellar depths, examination of the results of archaeologically directed field testing, and monitoring of preconstruction activities. Cores obtained as a part of the development project showed depth of existing fill. Cellar depths, when compared to fill depths, revealed remaining undisturbed fill that might contain resources. Coring data were obtained from the project's geotechnical consultant, while permit data were obtained from the City Building Department.

3. Step 3 - Pre-Demolition Testing Plan

On the basis of information provided by Steps 1 and 2, a testing plan was developed utilizing accessible areas on site. This plan is described in Phase II, below.

B. Phase II: Pre-Demolition Testing

A work plan for this phase of research was presented in the Draft EIR. That work plan included archaeologically controlled subsurface tests at locations accessible prior to demolition activities at the site. The anticipated activities were two shovel tests, two back-hoe test trenches, and two 2½ inch split-spoon cores. Text below describes the initial testing specifications as well as the actual procedures adapted to site conditions as necessary:

1. Step 1 - Shovel Test Pits

Placement of two shovel test pits in Bang's Alley was recommended.

Specifications: 1 m. x 1 m. tests. Units did not exceed 5 ft. in depth. All cultural material within each unit was accurately documented in accordance with professionally accepted methods. All recovered material was transported to a recognized archaeological laboratory facility for cleaning, analysis, and curation. Analysis of each test unit resulted in the identification of time periods represented and integrity of deposits.

2. Step 2 - Test Trenching

Two test trenches were recommended for evaluating the integrity of 73-79 State Street.

Specifications: test trenches were planned to be 10 ft. long and the width of a standard back-hoe trench, and to be excavated to below so-called fill layers.

Trench 1 was planned to determine the depth of the former cellars of the 73-75 State Street buildings. Prior to the excavation of TP 1, a test caisson was placed near the location of the test pit. This caisson placement included the excavation of three large units (one for the caisson and the other two for wells). Archaeologists monitored these excavations and cellar fill was exposed down to clay base. Thus the goals of TP 1 were met in the course of this monitoring.

Trench 2 was planned to discover any intact features associated with occupation of this part of the site. As a result of monitoring the caisson installation, the area was determined to have little or no integrity. However, the back wall of the cellar was exposed in the course of the excavations. A question regarding the integrity of the area behind the wall made it necessary to test behind the wall with a back-hoe trench.

A trench was placed as specified for TP 1 and TP 2 and located as shown in Fig. VI-1 for test pit 2. This trench indicated no integrity for this part of the site.

3. Step 3 - Borings

Two borings sited in the sidewalk along Doane Street were recommended in order to assist in evaluating the depth and integrity of deposits under 89 and 99 State Street (Fig. VI-1).

Specifications: Borings performed specifically for archaeological analysis were planned to be extracted with a 2½ in. split-spoon coring tool, continuously from ground surface to sterile clay (approximately 10 to 15 ft. at this site).

Research subsequent to the DEIR revealed that the planned borings were located above under-sidewalk vaults. As a result, the borings were moved to points just off the sidewalk. In addition, the borings were accomplished with a 3-in. inside diameter split-spoon. (Two-and-a-half-inch split spoons have a 1½ in. inside diameter.) This made possible the acquisition of a larger sample of material, making it easier to determine integrity. Each core was removed to an appropriate container and transported to a proper archaeological lab facility.

4. Step 4 - Analysis

In order to assess the potential for intact resources and subsurface disturbance on-site, the project archaeologist analyzed documentary research and the results of subsurface tests. The results of this analysis are presented in the following section, and were used in the preparation of a work plan for additional testing, also presented in this chapter.

Integrity of the Site

The previously described program of work was completed in the fall of 1985. The status of the site's resource potential at that time is diagrammed in Fig. VI-2. Later findings

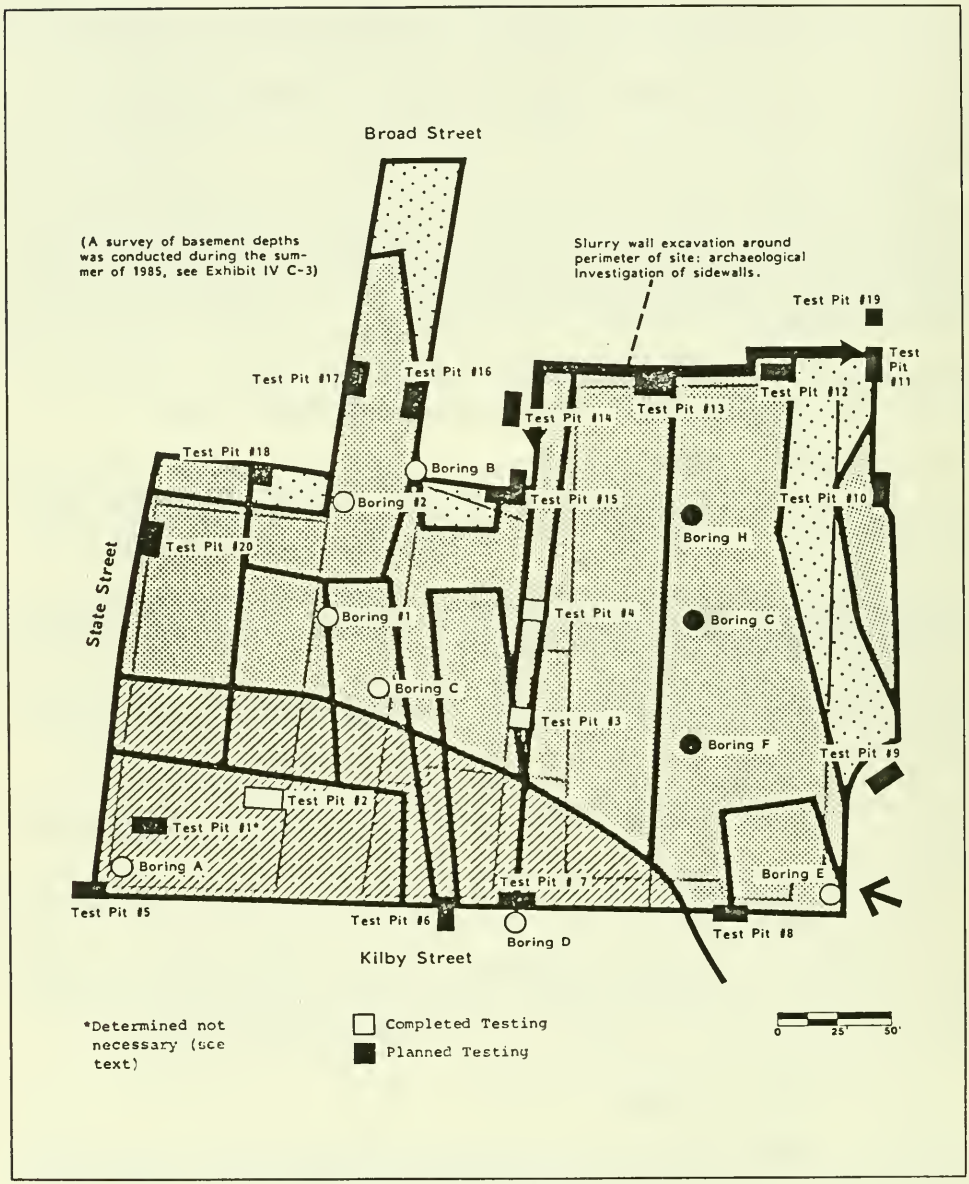


Figure VI-1 Boring, Hand Test, and Backhoe Test Unit Locations

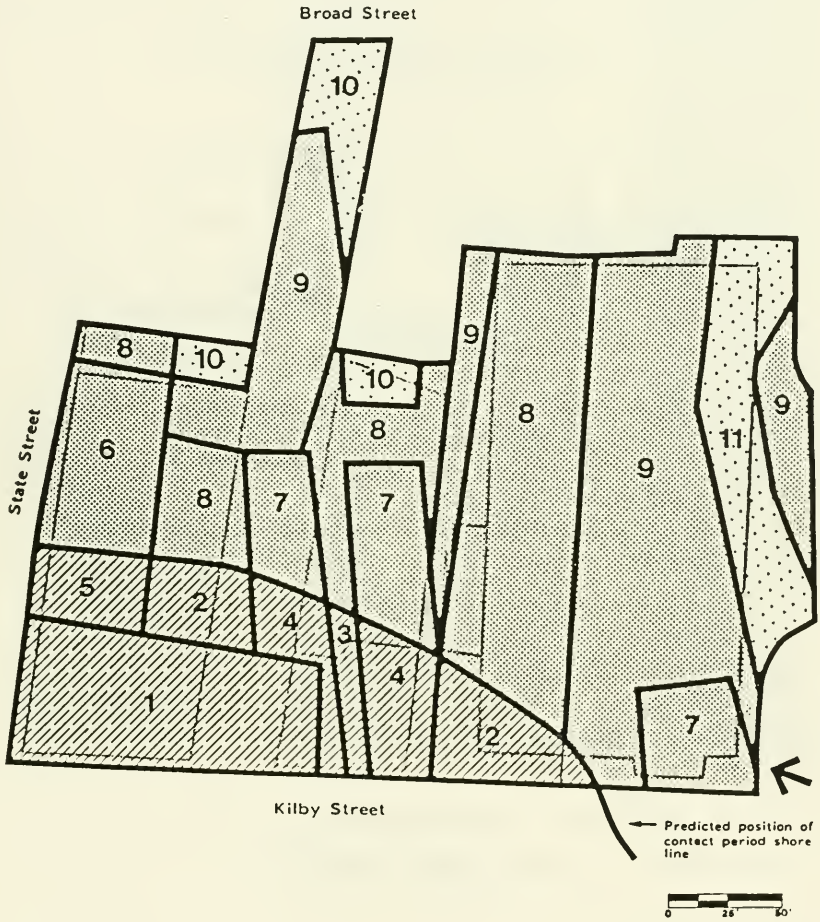
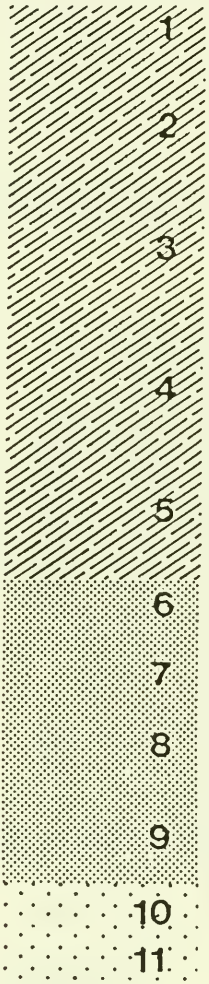


Figure VI-2a Resource Potential



1. Habitation Prehistoric/Contact (1), Agricultural/Residential 1620-1700 (1), Commercial 1700-Post 1800 (2)
2. Habitation Prehistoric/Contact (1), Agricultural/Residential 1620-1700 (1), Wharf/Residential 1700-1760 (2), Commercial 1760-Post 1800 (3)
3. Habitation Prehistoric/Contact (1), Agricultural/Residential 1620-1700 (1), Wharf 1700-1760 (2), Residential/Commercial 1760-1800 (3), Commercial Post 1800 (3)
4. Habitation Prehistoric/Contact (1), Agricultural/Residential 1620-1660 (1), Wharf 1660-1690 (2), Residential/Commercial 1690-Post 1880 (2)
5. Habitation Prehistoric/Contact (1), Wharf 1620-1760 (1), Residential/Commercial 1760-Post 1800 (3)
6. Wharf 1620-1760 (1), Residential/Commercial 1760-Post 1800 (3)
7. Wharf 1660-1690 (2), Residential/Commercial 1690-Post 1800 (2)
8. Wharf 1700-1760 (2), Residential/Commercial 1760-1800 (3), Commercial Post 1800 (3)
9. Wharf 1700-1800 (2), Commercial Post 1800 (3)
10. Wharf, Commercial Post 1800 (3)
11. Commercial Post 1800 (3)

(1) Possible New Data
(2) Possible Corroborative Data
(3) Possible Comparative Data

Figure VI-2b Resource Potential Key

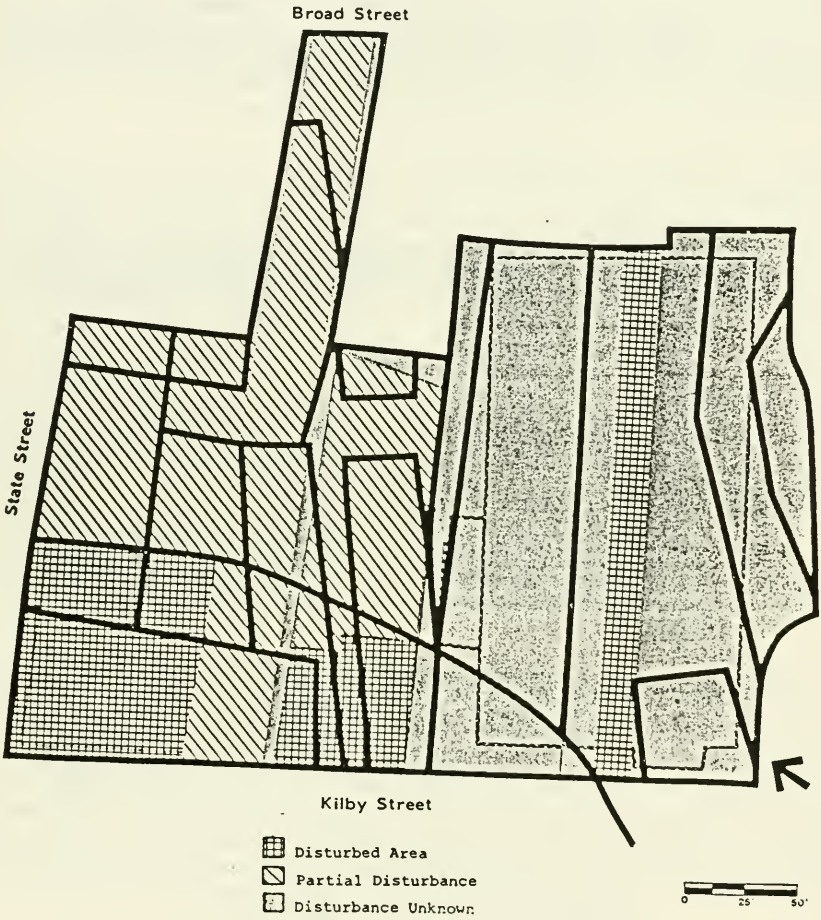


Figure VI-3 Subsurface Disturbance

indicated that significant disruption to large portions of the site had occurred (Fig. VI-3). No significant archaeological resources were discovered as a result of subsurface testing.

Figure VI-4 shows elevations of State Street, Kilby Street, and Doane Street. The boring information indicated the depth of fill deposits, which, in the present analysis, are assumed to be the depth of Historic Period deposits. This does not take into account any early features such as post holes, wells, privies and pits which could have been excavated into subsoil. Existing basement depths indicated the depth of disturbance on a site as revealed by physical examination and monitoring of preconstruction tests.

On the basis of previous archaeological work conducted in this area of Boston--at the Bostonian Hotel Site (Bradley 1983), Parcel D-10 (Bower et al. 1984), and the Wilkinson Backlot Site (Beaudry 1984)--we can infer the depths at which archaeological deposits might occur. At the Bostonian Hotel Site, the depth of cultural levels ranged from 8 to 14 ft., the deepest deposits occurring in original waterfront areas that were filled in the late seventeenth and eighteenth centuries (Bradley 1983). At the Wilkinson Backlot Site excavation uncovered an intact seventeenth-century saw pit that extended to a depth of what appeared to be 8 ft. (Beaudry 1983:29-32). At Parcel D-10, less than two blocks from the 75 State Street block, the remains of Long Wharf and Historic Period cultural debris reached a depth of 13.5 ft. (Bower et al. 1984:37). Thus on the basis of previous work it can be projected that archaeological deposits on original land surfaces could reach depths of 8 to 10 ft. (if the area had not been cut down), while original waterfront areas that were wharfed out and filled could reach maximum depths of 14 ft.

73-75 and 77-79 State Street

The entire area under these two lots appeared to be totally disturbed. This conclusion was based on the following findings.

The boring taken in the parking lot at the corner of State and Kilby Streets showed fill to a depth of 9.5 ft. (Fig. VI-4). Sample 2 of this boring, taken from 5 to 7 ft., contained some glass and wood fragments that were too small for diagnosis. Historic photographs of the 75 State Street Building show that it had a sidewalk entrance to the basement, similar to the corner entrance of the Exchange Building across the street. The Exchange Building basement has a maximum depth of 6 ft. below street grade at the corner. The 77-79 State Street lot was at the time of the investigation part of the parking lot at the corner of State and Kilby Streets, but also contained a small walk-up Fotomat store. The previous structure was probably a three-story granite-fronted building built before 1888.

Monitoring of several excavations for a test caisson at this location revealed the cellar from the former building to extend to the clay base at approximately 10 ft. of depth. The former cellar floor consisted of granite blocks lying directly on the clay beneath the fill layers. The locations of these excavations were within the area where Test Pit 1 was planned to go, and the monitoring of these excavations met the goals of Test Pit 1. From the monitoring of these units it was clear that the basement and foundation of 73-75 State Street fully

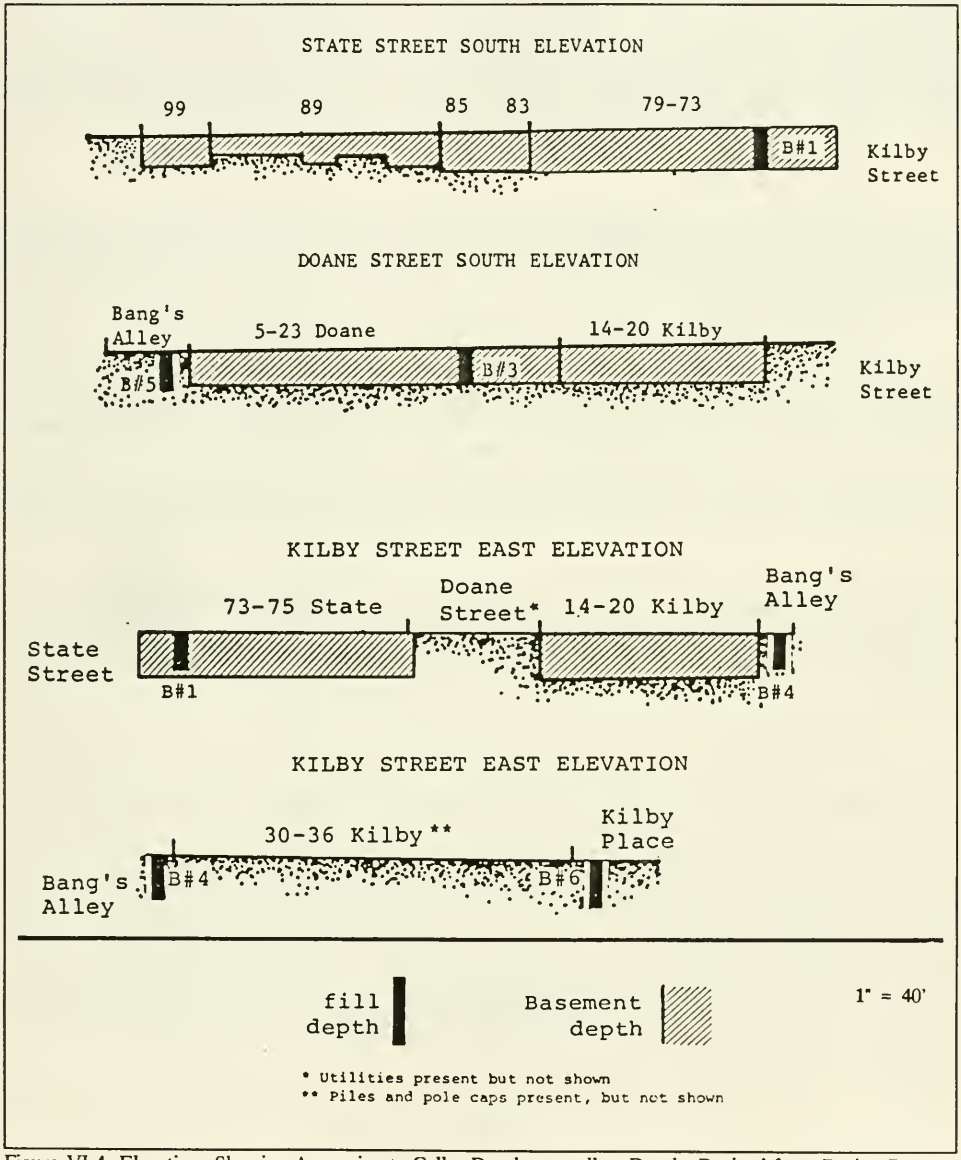


Figure VI-4 Elevations Showing Approximate Cellar Depths as well as Depths Derived from Boring Data

destroyed earlier archaeological deposits. The back wall of the building was identified within the excavations and it was determined that while the proposed Test Pits 1 and 2 were not necessary, it was desirable to view behind the wall since it was possible intact deposits remained there. However, the excavation of Test Pit 2 revealed that this area had also been subject to previous cellar disturbance. Thus the entire area under the lot at 73-75 and 77-79 State Street appeared to be totally disturbed.

83-85 State Street

The 1924 five-story brick building on this lot had a 10-ft.-deep basement that probably destroyed any early archaeological deposits. Monitoring and testing in the adjacent parking lot confirmed this conclusion.

89 State Street

The area under this lot appeared to be, at minimum, partially disturbed. The 15-story Fiske Building had a very shallow basement of approximately 5 ft. below street grade. Two areas on the north wall of the building, the boiler room and the sump-pump area, were excavated to 6 to 8 ft. below grade. There was a slab concrete floor in at least some areas. The condition of the basement was hazardous because of two fires, one of which had occurred in the basement.

A 3½ inch inside-diameter split spoon boring was taken on the Doane Street site of the Fiske Building to determine the depth of deposits under the building. The boring recovered fill deposit to 10 ft., revealing the probability that 2 to 5 ft. of fill deposit lay below the various sections of the Fiske Building. Thus intact fill deposits might have existed within this zone.

99 State Street

The area under this lot appeared to be at least partially disturbed. The five-story brick building at 99 State Street had only an 8-ft.-deep basement, which may have dated to the previous structure on the site. A boring taken across Doane Street contained fill to 9.5 ft. Sample 3 of this boring, taken from 9.5 to 11.5 ft., contained several remnants of wooden wharf piling and the fill continued to 13.5 ft. This suggested that 99 State Street sat on filled land and that there might have been archaeologically significant remains under the cellar. An additional boring on the 99 State Street side of Doane Street confirmed this prediction with a fill depth of 10.6 ft. While the boring was originally planned for the sidewalk at this location, pre-boring research found that below-sidewalk vaults constructed to the depth of the inside cellar ruled out the intended location. The boring was placed at the edge of the street instead.

14-20 Kilby Street

The foundation for 14-20 Kilby Street was excavated in 1919. The nine-story structure had a 12-ft. basement that reached under the sidewalks of both Kilby and Doane Streets. This building had probably obliterated any significant archaeological resources.

5 Doane Street

The area under this lot appears to be, at minimum, partially disturbed. The 5 Doane Street Building was constructed in 1922, with a 10-ft. basement depth. A boring taken in front of the building found fill to 10 ft. below grade. A boring taken at the corner of Doane Street and Bang's Alley near the northeast corner of the building found fill and wharf deposits to 13.5 ft. Two hand-excavated test pits in Bang's Alley behind the building indicated fill to approximately 8 to 9 ft., although no archaeological features were found in these test units. Thus, the 10-ft. basement depth appears to have disturbed at least a large proportion of resources at this lot, although it was possible that some resources might remain at points where fill exceeded 10 ft. in depth.

Doane Street was originally, in the early eighteenth century, a 10-ft.-wide street leading to Peck's Wharf. It was possible that earlier well and privy deposits existed under the street, as well as remnants of earlier foundations.

30-36 Kilby Street

Disturbance of the area under this lot was not fully determined as a result of the testing at this phase. The parking garage at 30-36 Kilby Street had no cellar. However, plans from the construction of the parking garage were not available, so there was no information on how pilings or other foundations might have impacted the site. A boring taken at the northwest corner of the garage uncovered fill deposits to 9 ft. below grade. A boring taken at the southwest corner of the site had fill deposits to 10.5 ft. below grade. Before the parking garage, the lot contained two commercial buildings split by Central Street.

The Central Street portion of the site was the most likely to contain intact deposits because it was probably not built on after 1760. However, the elevator system of the garage and pre-1968 utilities might have impacted this area. Review of construction plans of the garage would have been the most helpful step in determining the integrity of this lot. It was determined that, should additional boring or test loads be done in Kilby Place, they would be monitored by an archaeologist. Plans were made to take borings through the existing garage floor in order to assess disturbance under this lot.

The hand testing in Bang's Alley also shed light on the depth of deposits under the garage. Analysis of the hand tests revealed that any disturbance below approximately 8 ft. would have eradicated remaining archaeological deposits.

The objective of Phase III was to identify further areas that might contain intact archaeological resources and--to the maximum degree feasible--to continue preconstruction investigation of the site so that subsequent construction activities could proceed with a maximum degree of certainty regarding subsurface resources and disturbance. This included the unusual step of taking borings through the concrete floor slab of the Kilby Street Garage in order to assess subsurface conditions at that location. The objective of Phase IV was to complete the archaeological research by conducting post-demolition testing of areas which were currently inaccessible due to the presence of structures on site.

C. Phase III: Further Pre-Demolition Testing

Analysis of the further subsurface testing modified the graphic presented in the FEIR as VI-5. All the area under the Kilby Street Garage previously identified as "disturbance unknown" was modified to "partial disturbance." This change was due to the identification of a void beneath the floor of the garage, which meant that resources within this zone were truncated, with probable disruption of the fabric and associations of most of the resources within the zone.

VII SITE-MONITORING (Phase IV-Post demolition testing) METHODS AND STRATEGY

Over the course of construction excavation, representatives of Timelines, Inc. monitored and conducted spot checks of the site. One goal of this monitoring was to identify in the field wharfing elements that were expected to exist even though their integrity was questionable. A second goal was to locate as accurately as possible the original shore line of early Boston. The third goal was to search the excavated area for evidence of unknown or unexpected cultural resources. Timing of site visits was based on information from Beacon construction personnel who were aware of the classes of material important to the team, and on random spot checks designed to discover previously unknown classes of data. During the excavation activity in and around the areas of intact wharfing, monitoring and documentation of the nature, location and technology of the wharves was conducted. A total of 390 hours were expended in this monitoring process.

Methodology included the observation of pre-digs for caissons, and excavation of the project area from +14 to +10. We noted how accurately the excavated wharfing was located in relation to that shown on historical maps and to expectations developed in the earlier Timelines reports. In addition, we researched wharf construction and compared the site with previous site excavations along the eastern seaboard and in Europe.

Wharfing terminology was put into a glossary and used to construct a field form. The form was set up for quick recording of site integrity in light of the fact that the project had to rely on monitoring (Fig. VII-1).

The site was divided into five areas of excavation, A-E (Fig. VII-2). Pre-digs and excavation proceeded in that order generally. Continuous color-coded and dated site maps were kept. Black-and-white 135 mm. photographs and 110 color photos were taken of machine excavations and wharf timbers. Wharf timbers were tagged, photographed, and drawn for easier location at the dump. Timbers were transported to the V.A. Hospital dump site on Route 1 in West Roxbury. Samples of wharf timbers/joinery from the site and dump were photographed and drawn. These timbers were used for comparison purposes with other wharf sites in the eastern United States and Europe. Thus, in terms of the significance criteria of our reconnaissance report, we feel that there were sufficient wharf-related comparative data to allow for their use as such in this report. Samples were also taken for species identification and relative tree-ring dating.

TIMELINES, INC.

75 STATE STREET

Site_____ Date_____

Area										
Test Pit										
P./Feature										
Depth										
Plan										
Profile										
Photos										
Assoc. P/F										
Bag #										
Artifacts										
Clay										
Peat										
Fill										
Burned										
Cobblestones										
Wharfing										
Cribbing										
Headers										
Stretchers										
Bulkhead/Face										
Bulkhead brace										
Ballard/ Mooring Post										
Tieback										
Joinery										
Pegging										
Sq/round/1/4 Timbers										
Timber Species										

Description/Terminology:

Figure VII-1 Wharfing Catalogue Form

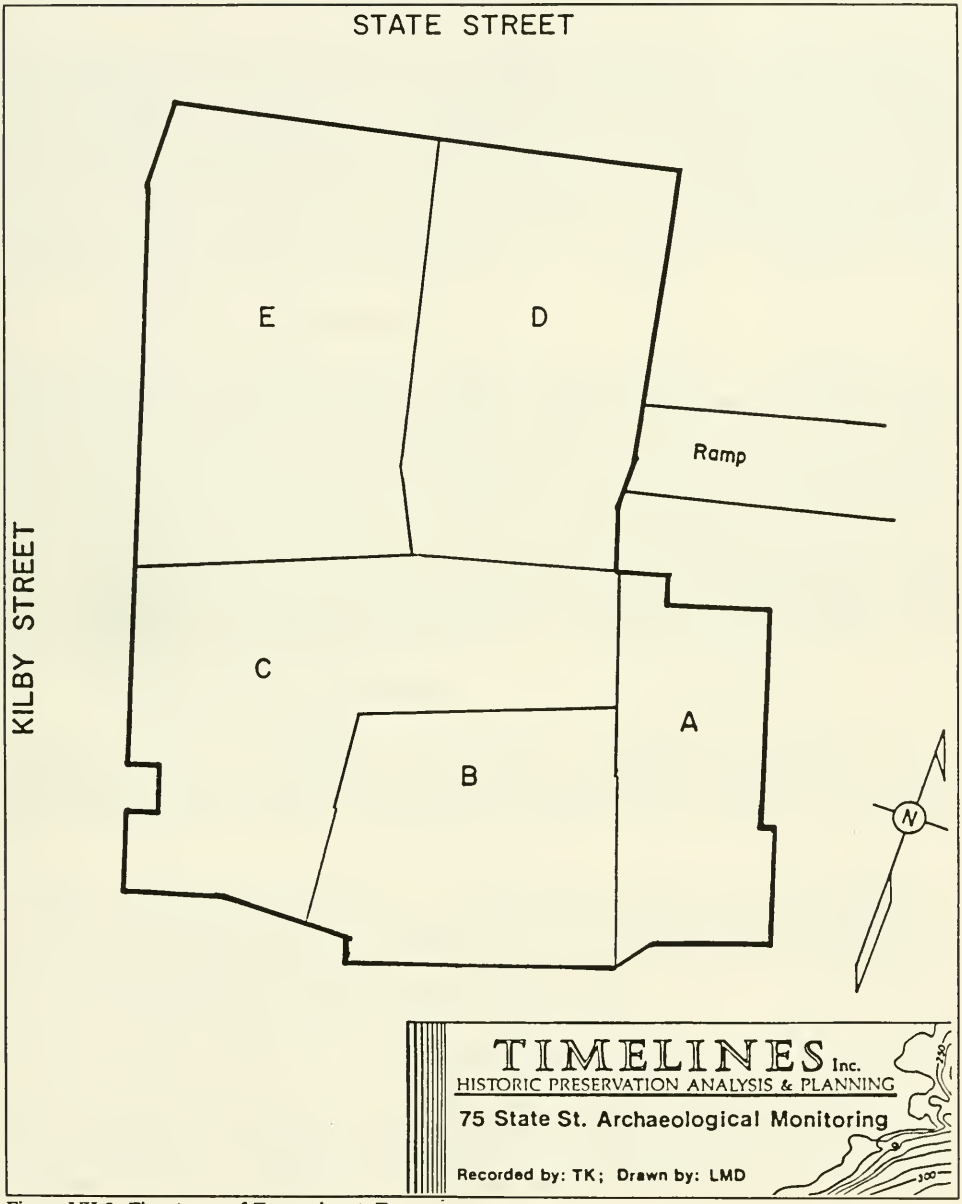


Figure VII-2 Five Areas of Excavation A-E

VIII RESULTS OF SITE MONITORING

A. Shore-Front Maritime Facilities

The following sections describe the field work monitored by Timelines, Inc. with concentration on the documentation for comparative purposes of the wharfs and docks of colonial Boston. Comparisons are made in the text and graphically of the various details of construction at the 75 State Street site and other similar sites in the eastern Unites States and Europe. Photographic notes identify the sites that may be compared to the 75 State Street site, while the note numbers refer to the sources for comparison at the end of this section. In addition, a glossary of terms was developed in order to aid in the standardizing of the descriptions of shorefront maritime facilities. Both the photo comparisons and the glossary are found at the end of this section.

1. Field Work - by Tim Kennedy

The first pre-digs were the sump holes in Areas B and D (Fig. VIII-1). These holes were in place before site observation started on 2/4/87. The sump holes were not given numbers. The Area D sump, as far as we could tell, contained no wharf-related materials, only evidence of nineteenth-century disturbances and fill. In the Area B sump, nineteenth-century fill was removed to expose peat and clay around an intact wharf surface/cribbing (Photo VIII-1). This cribbing was not uncovered, but the surface looked similar to previously excavated open-celled cribbing (for example, Town Dock, Charlestown, MA; Parker Harris, Charlestown, MA; Cheapside, Baltimore, MD; Old Slip and Cruger's Wharf, NY; Douglass Wharf, New London, CT; and Puddle Dock, Portsmouth, NH). Four large wharf timbers removed from the Area B sump were possibly related to Oliver's Dock (Photos VIII-2 a, b, and c and Fig. VIII-2).

South Half of Site (Fig. VIII-1)

Pre-digs 1 to 3 in the north end of Area A contained fill and evidence of nineteenth/twentieth-century disturbances. Cement/rebar supports for the parking garage were removed from the holes. No wharf-related timbers were excavated from these pre-digs.

Pre-dig 4 uncovered what looked to be a wharf-related structure with an overburden of nineteenth-century fill. This structure contained a face/bulkhead of round, slightly-hewn stretchers with planks below, and a large, round pile as a bulkhead brace (Photo VIII-3). The whole structure was left intact in the south wall of the pre-dig. A strut was also recovered from the pre-dig (Photo VIII-4 and Fig. VIII-3).

Pre-digs 5 and 6 contained no wharf-related materials/members.

Pre-dig 7 contained more timbers than any previous pre-dig. These timbers were large and small, round and square, some hewn and some with treenails and treenail holes. A large squared timber with rectangular pegs (treenails) was recovered from pre-dig 7, along with a squared hewn timber with holes at each end. The two timbers may once have joined

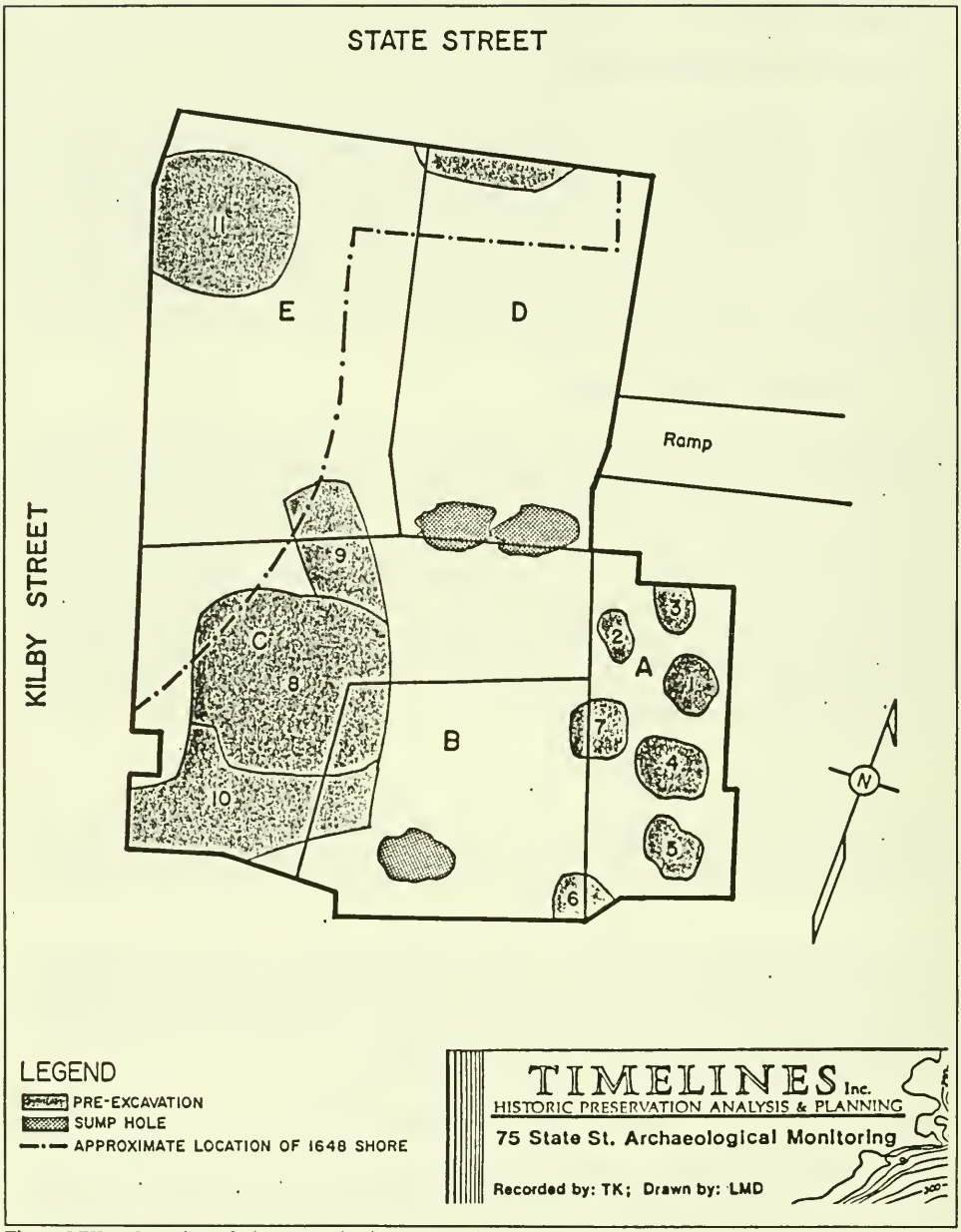


Figure VIII-1 Location of First Pre-Digs in Sump Holes, Areas B & D

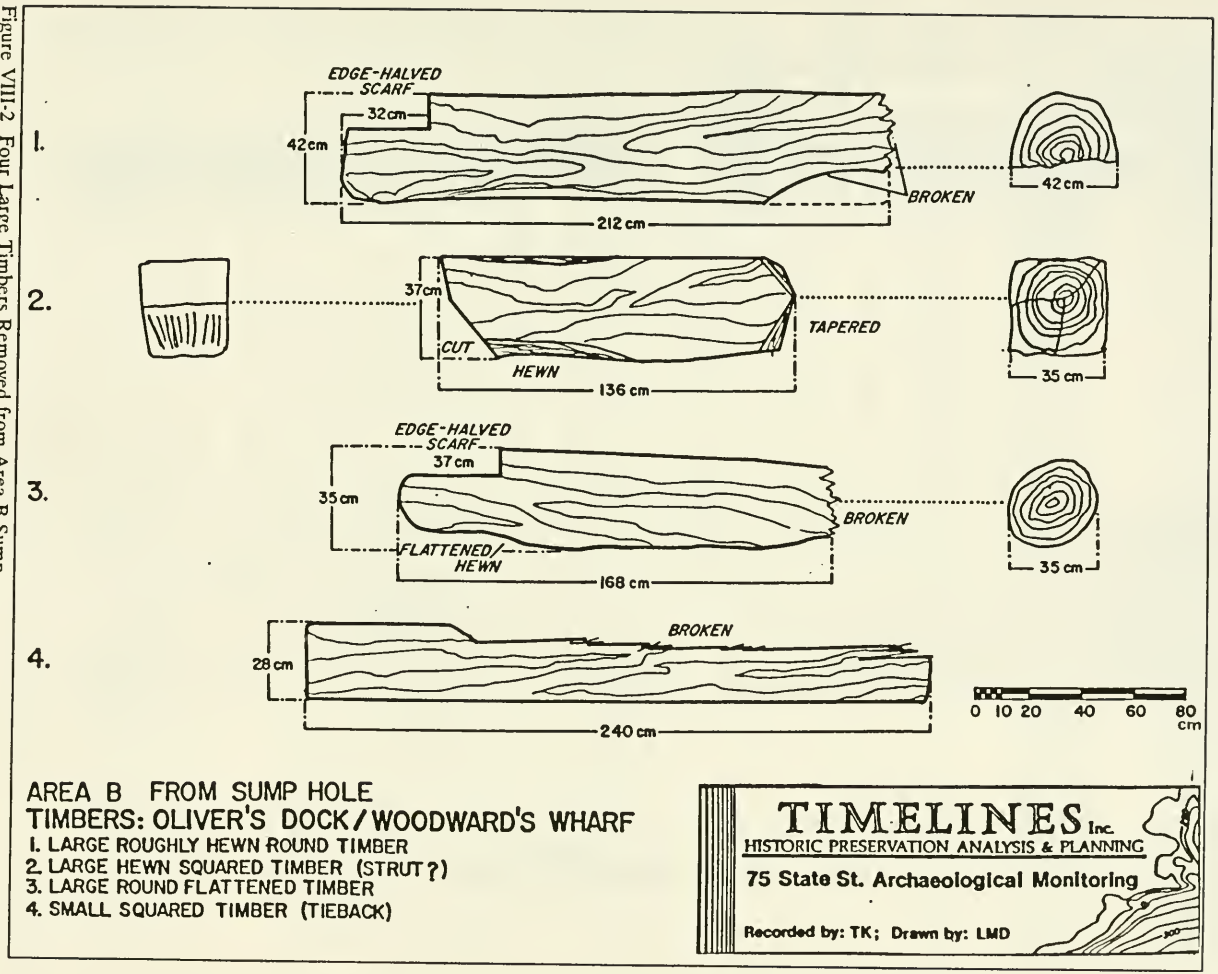


Figure VIII-2 Four Large Timbers Removed from Area B Sump

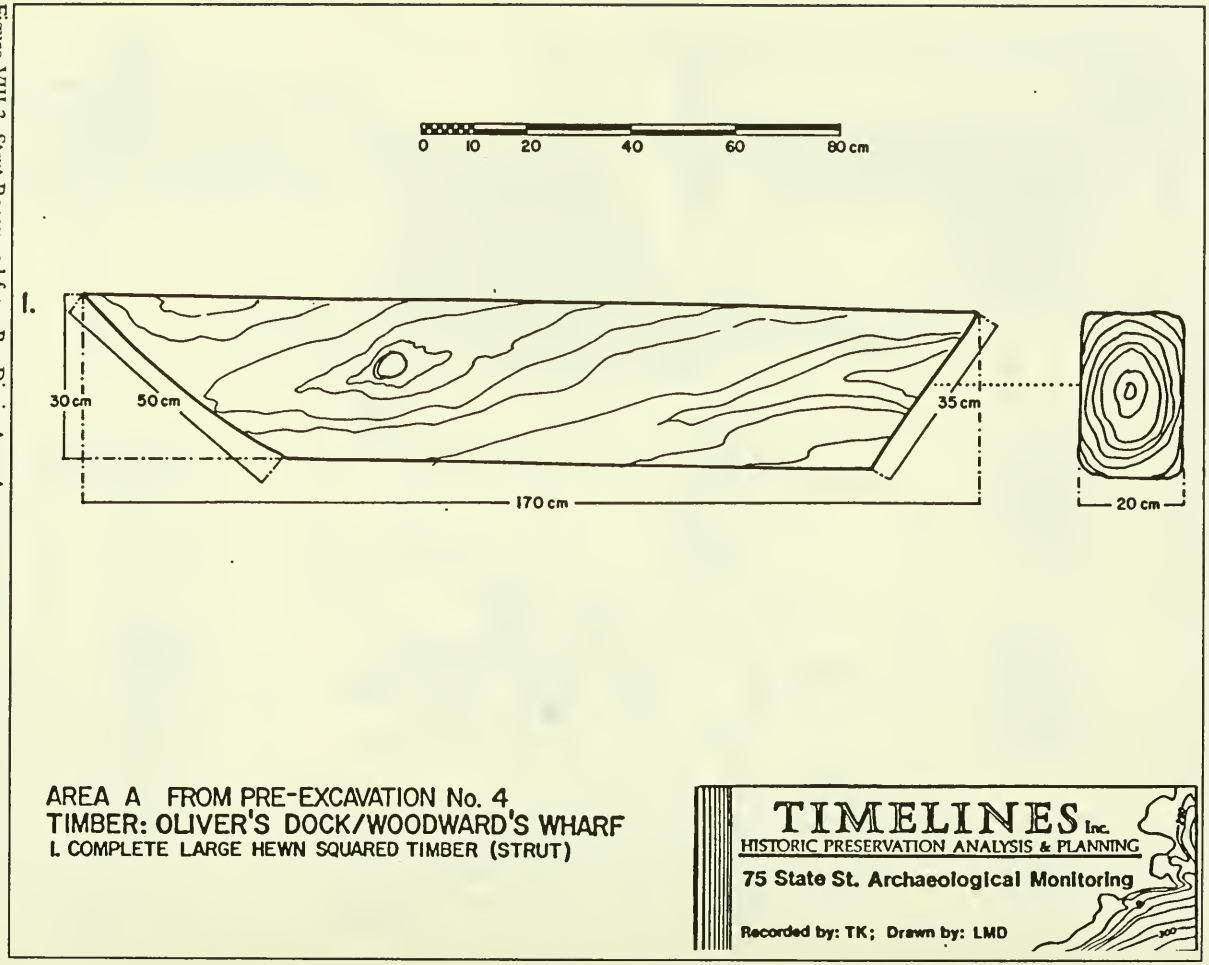


Figure VIII-3 Strut Recovered from Pre-Dig in Area A

(Photos VIII-5-11 and Fig. VIII-4). Large granite blocks were also recovered and may be related to Oliver's Dock. The small squared timbers from this pre-dig are similar to the timbers from the Area B sump. A large pile was recorded and left intact in the south wall of pre-dig 7 (Photo VIII-12).

Area C/B, excavation 8 (south half), had been partly excavated before we arrived on the site. The back dirt from this hole contained nineteenth-century fill with burned brick, granite blocks, and a few large squared timbers. The back hoe pulled up cement with rebar which was related to an old parking garage (north half).

Area C/E, excavation 9, was a large back hoe trench running north from excavation 8. Excavation 9 also contained cement/rebar footings.

Excavation 10 was not observed and was not taken deep enough to obtain any wharfing or shoreline.

North Half of Site (Figs. VIII-1 and VIII-5)

Excavation 11 (Fig. VIII-1) was put in the northwest corner of the site, Area E, to about 25 ft. below ground. There was no sign of wharfing.

The north half of the site, Areas D and E, was excavated in large areas, and is noted by the dates on Fig. VIII-5. Numbers were not assigned to these large areas, but only for the pre-digs that follow the excavations. Historical maps/documents showed that three wharfs were located in this area, ca. 1676 (Fig. VIII-6 and -7: Leverett's, Mann's, and Marshall's).

Trenching and excavation of the middle of the site started on 2/28/87. The Trench 1 excavation located a cement/rebar foundation which was part of the old parking garage. After Trench 1 was excavated, the back hoe pulled back fill/clay from the south to the north. The large back hoe took Trench 1 deep, to about 20 ft. below ground. The foundation of the parking garage sat upon large granite footings or bulkheads, approximately 20 ft. below ground. Fill from Trench 1 contained scrap metal, old radiators, pipes, etc. The west end of Trench 1 was most deeply excavated in order to remove the footings. There was no sign of the original shoreline. A small round pile with wood chips and clay, and a medium-sized tree trunk were excavated from Trench 1. The pile and trunk were probably used as fill, and might possibly be related to Marshall's Wharf (Photos VIII-13 and 14). There was no sign of intact wharfing in the Trench 1 area.

The area north of Trench 1 was excavated on 2/29/87 to a depth of approximately 25 ft. below ground. A large cement/rebar footing or bulkhead was found about 10 ft. below ground. The bulkhead was for a nineteenth-century brick foundation. West of the bulkhead were located clay and a small builder's trench. There was more fill and nineteenth-century disturbance than we expected in the middle of the site. Thus, any wharfing had been destroyed by disturbances and fill sequences. There was no sign of the original shoreline.

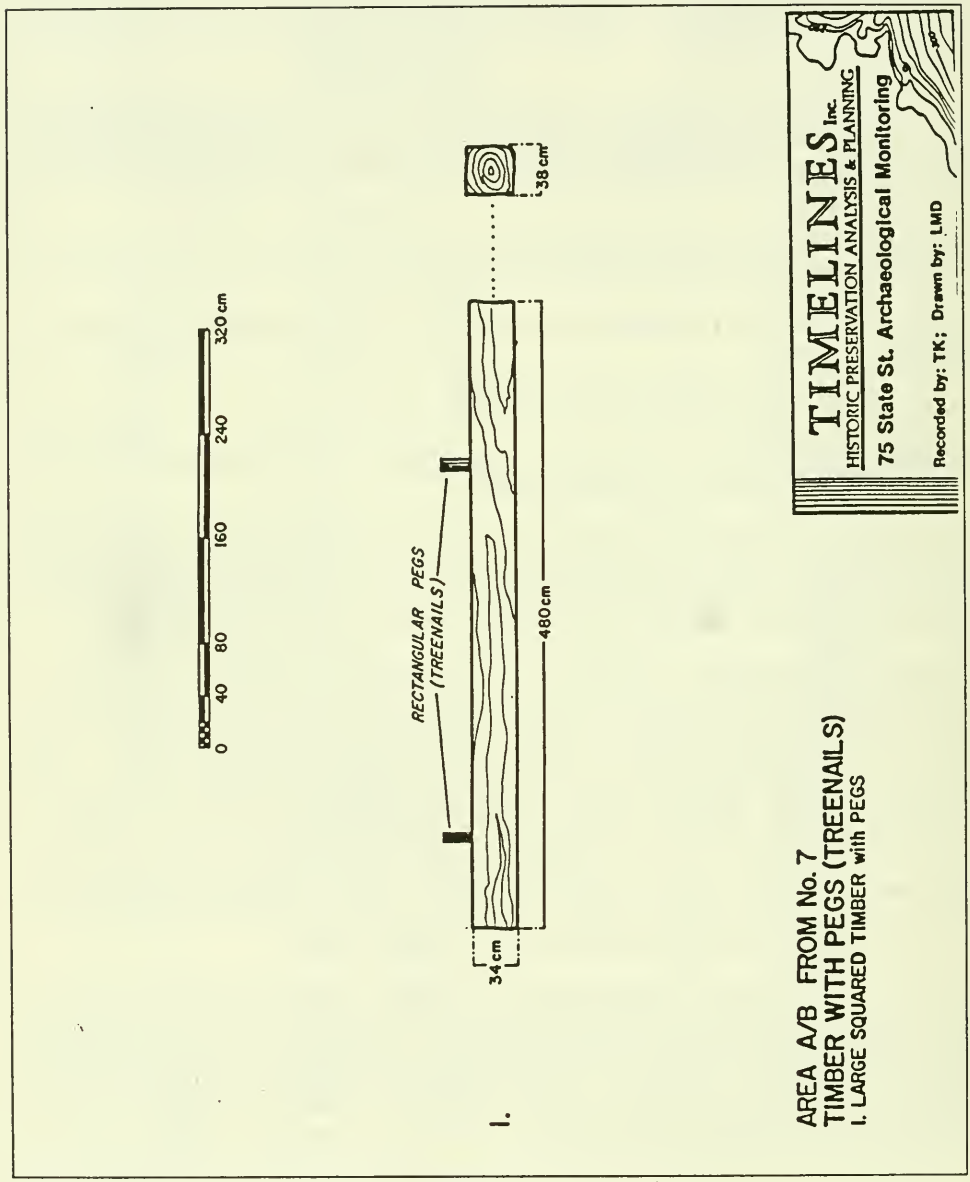


Figure VIII-4 Large Squared Timber with Rectangular Pegs, from Pre-Dig 7

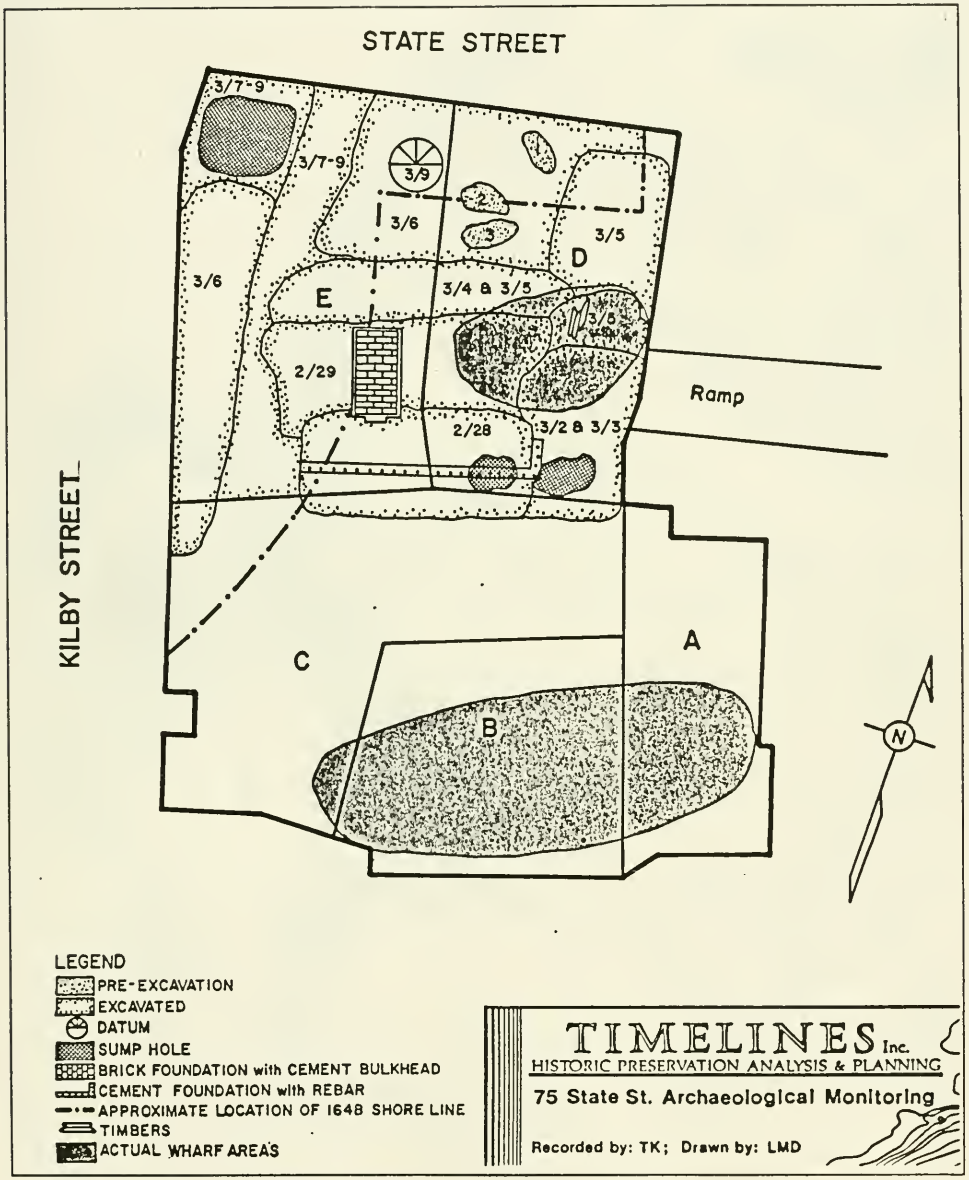


Figure VIII-5 North Half of Site Excavated in Large Areas

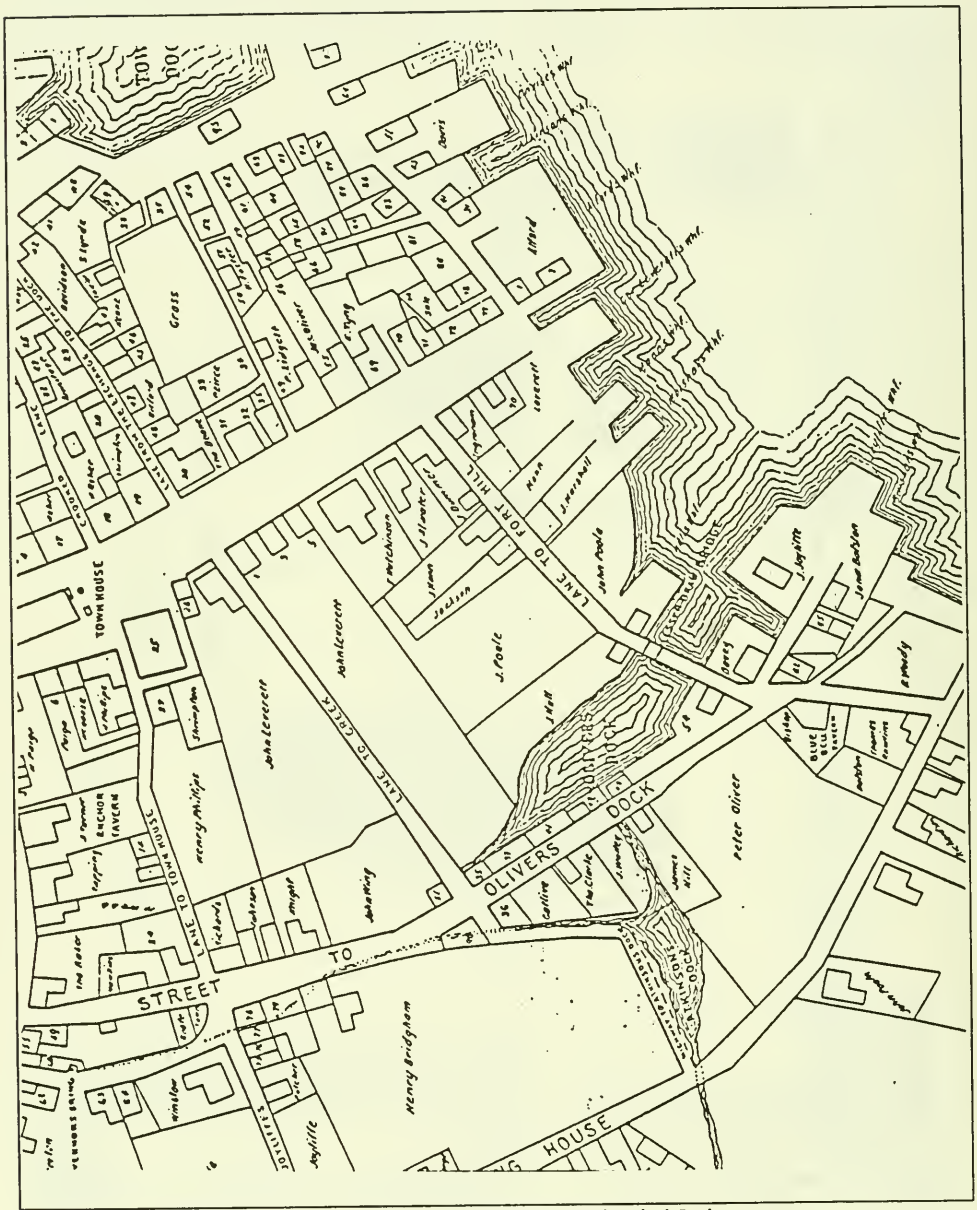


Figure VIII-6 1676 Clough Map, Courtesy of the Massachusetts Historical Society

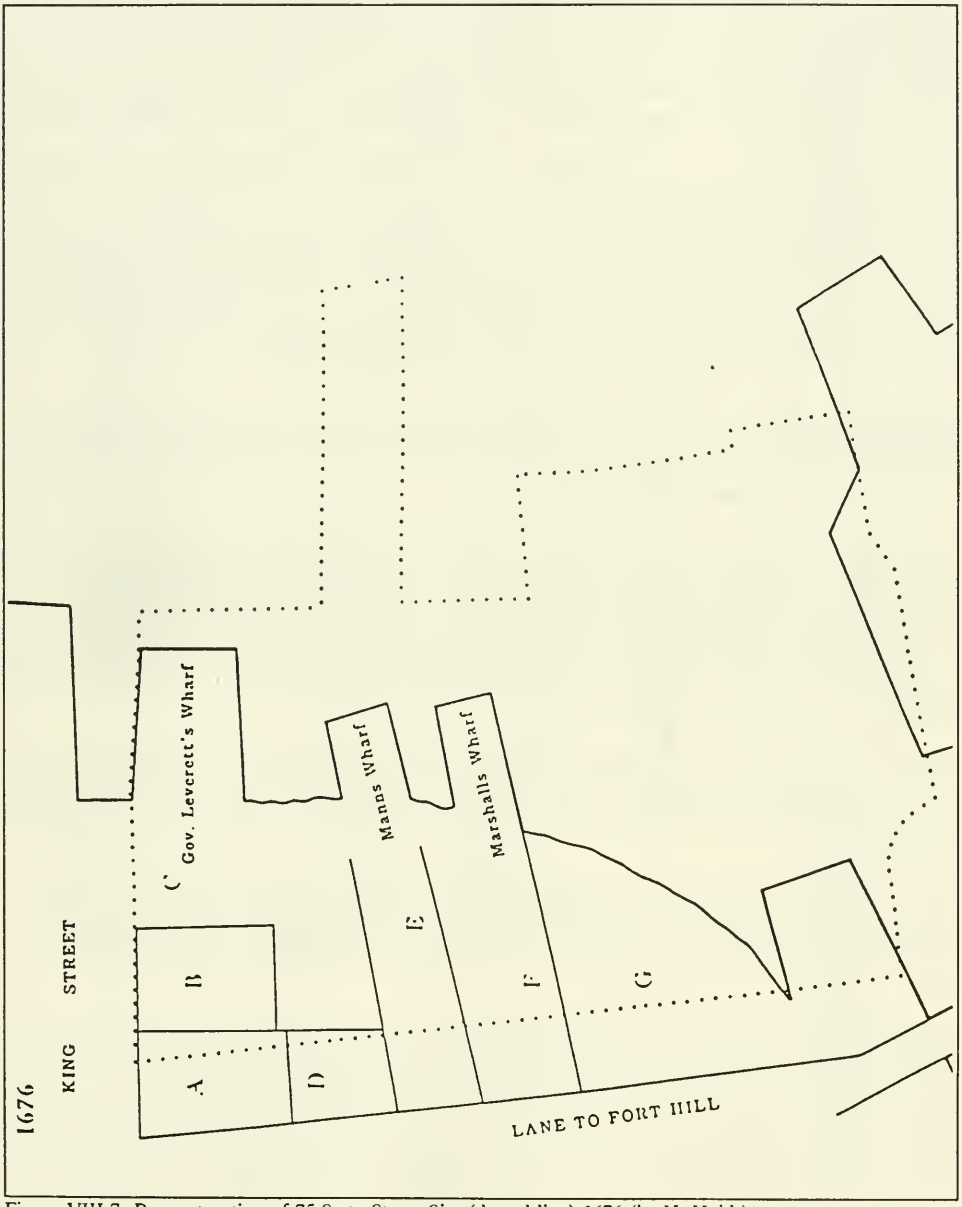


Figure VIII-7 Reconstruction of 75 State Street Site (dotted line) 1676 (by H. Heidt)

On 3/2/87 and 3/3/87, the middle of the site was excavated and leveled off. Only a few squared wharf members were removed from this area; they had probably been used as fill. Along with the timbers were found small branches and tree trunks, fill-related. This area seemed to be disturbed down to the clay. It was difficult to determine whether the clay was marine or redeposited. The squared timbers could have been related to a building cribbing.

The next excavation area was that of Doane's Alley/ramp, on 3/4/87 and 3/5/87. This area was excavated to approximately +10, directly west of Doane's Alley. The back hoe exposed and removed cement footings with organic soil and clay, related to the 14-20 Kilby Street building (twentieth century). In the organic soil and clay were small/medium round saplings that had been set upon the footings, possibly as road or building cribbing. The cement footings were set on blue marine clay at approximately +5. The footings needed to be set on marine clay rather than redeposited clay for stability. Also, the excavation revealed some granite blocks in no kind of sequence. No intact wharfing was found.

The back hoe excavated in the east part of Doane's Alley on 3/5/87. About 10 ft. of fill was removed down to a tight timber cribbing, which at first we thought was a "corduroy road" (Bower et al. 1984). This cribbing was set in and upon a blue-green clay, that had been redeposited (Photos VIII-15 and 16).

The back hoe excavated Area D/E down to about 10 ft. on 3/6/87. A nineteenth/twentieth century brick and cement foundation with fill was uncovered and removed. The depth of this disturbance probably destroyed any existing wharfing. Also the northeast part of Area E and the north part of Area D were excavated to about 4 ft. Pre-digs 1 to 3 in Area D were excavated and later filled to level off the area. No archaeological features or wharfing were located or exposed. Nineteenth/twentieth century brick and cement foundations were noticed in the north wall of the site, Area E.

On 3/9/87, two timbers were excavated from Area B. These timbers were large, wide and short in length, and were probably related to Oliver's Dock. They are similar to the timbers that came out of Area A and Area B in the south end of the site (Photos VIII-17-21 and Fig. VIII-8).

Finally, many timbers from Area A and Area B were taken to the dump. Eleven timbers, three planks, and one tree trunk were later recovered from the dump. These timbers were photographed and drawn and sections submitted for tree-ring analysis (Figs. VIII-9 to VIII-12).

Several samples of wharfing timber were taken for the purpose of obtaining dates by tree-ring analysis. Samples were cut according to specifications supplied by Dr. Gordon Jacoby of the Tree Ring Laboratory of the Lamont-Doherty Geophysical Laboratory, Columbia University (Photo VIII-22). Four samples were found suitable for dating on the basis of species and other factors. Figure VIII-13 illustrates the timelines for four of the samples. These timelines indicate that they were used as a part of Oliver's Dock late in its life and thus represent repair or modification episodes. It should be noted that these samples

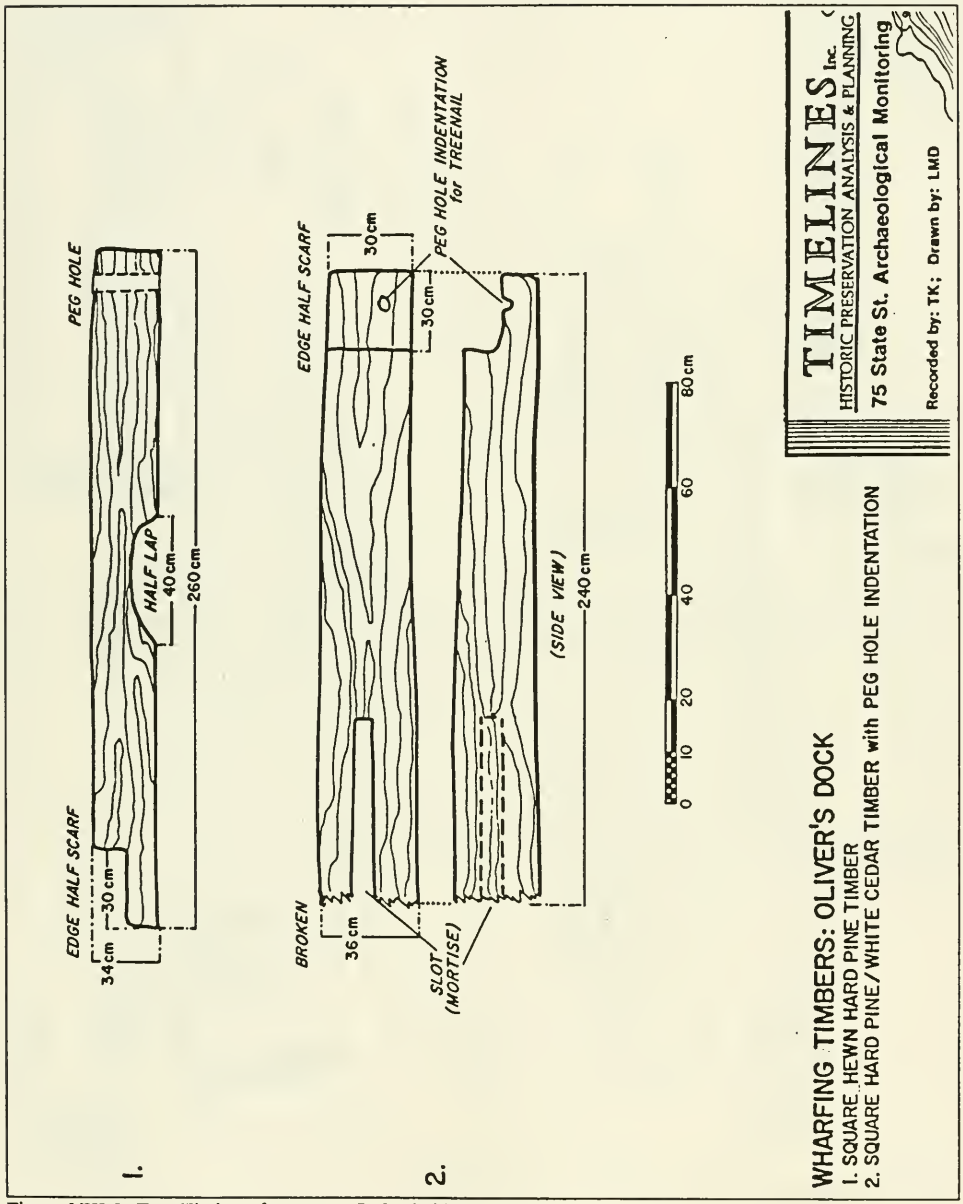


Figure VIII-8 Two Timbers from Area B, Probably Related to Oliver's Dock

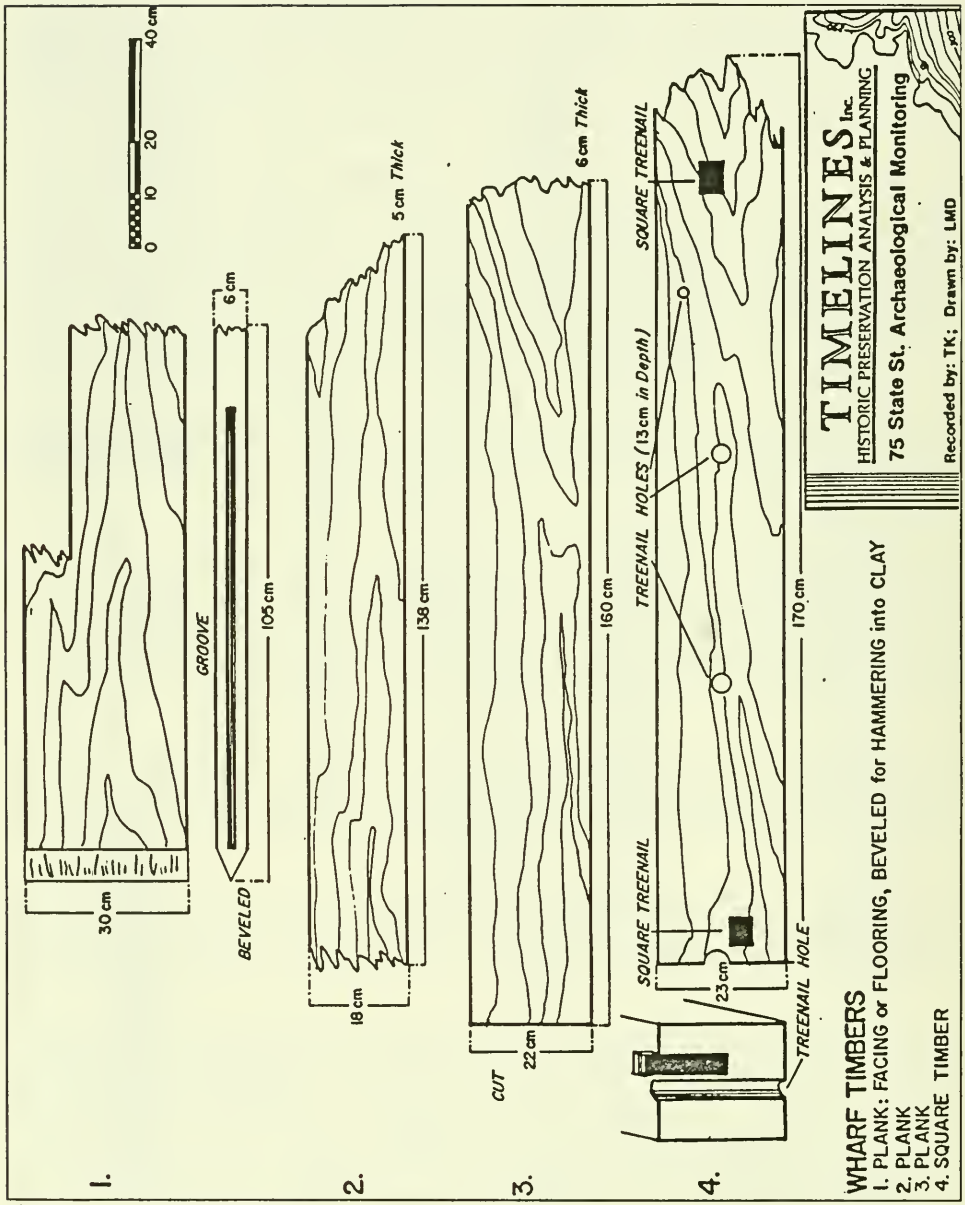


Figure VIII-9 Wharf Timbers 1-4

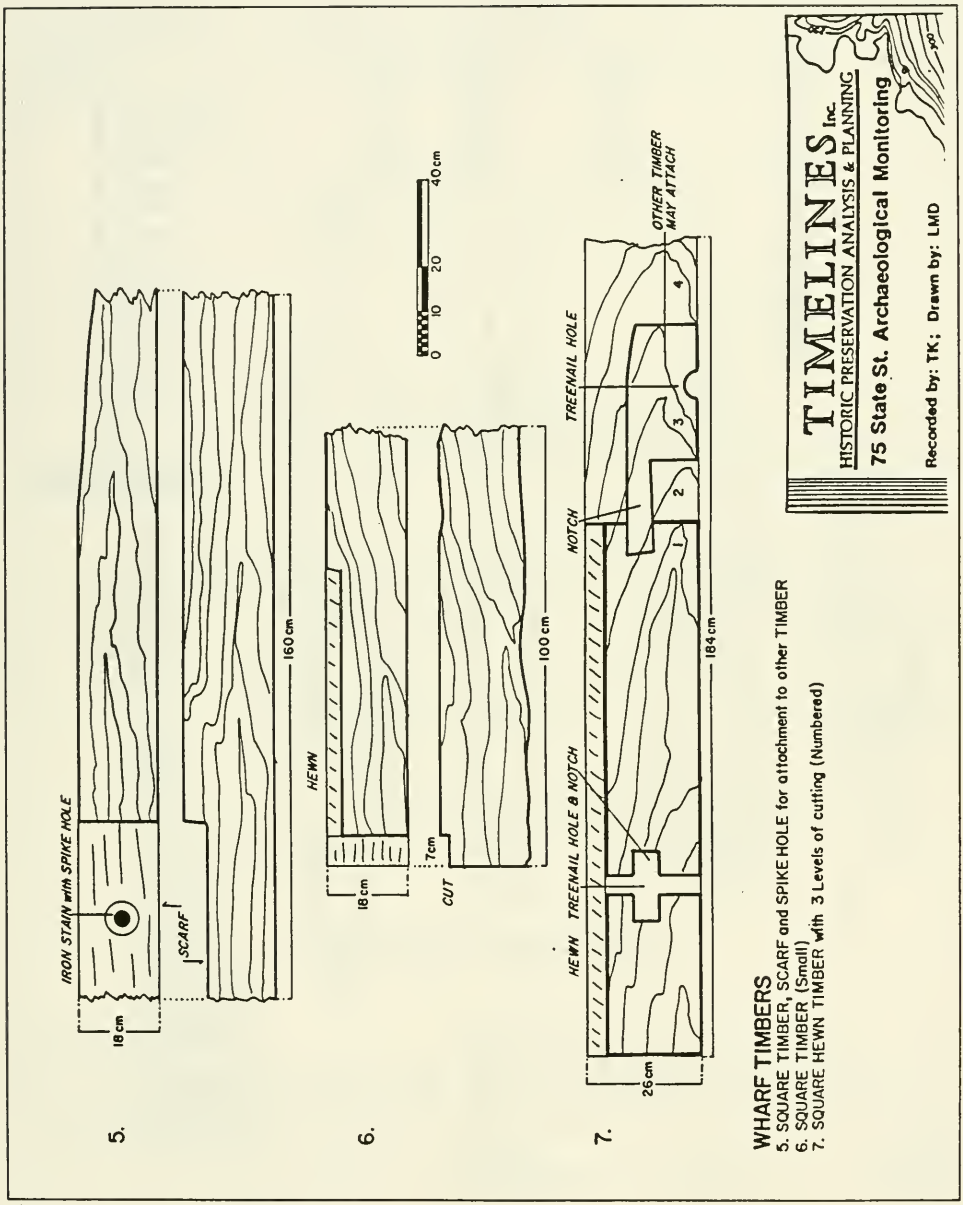


Figure VIII-10 Wharf Timbers 5-7

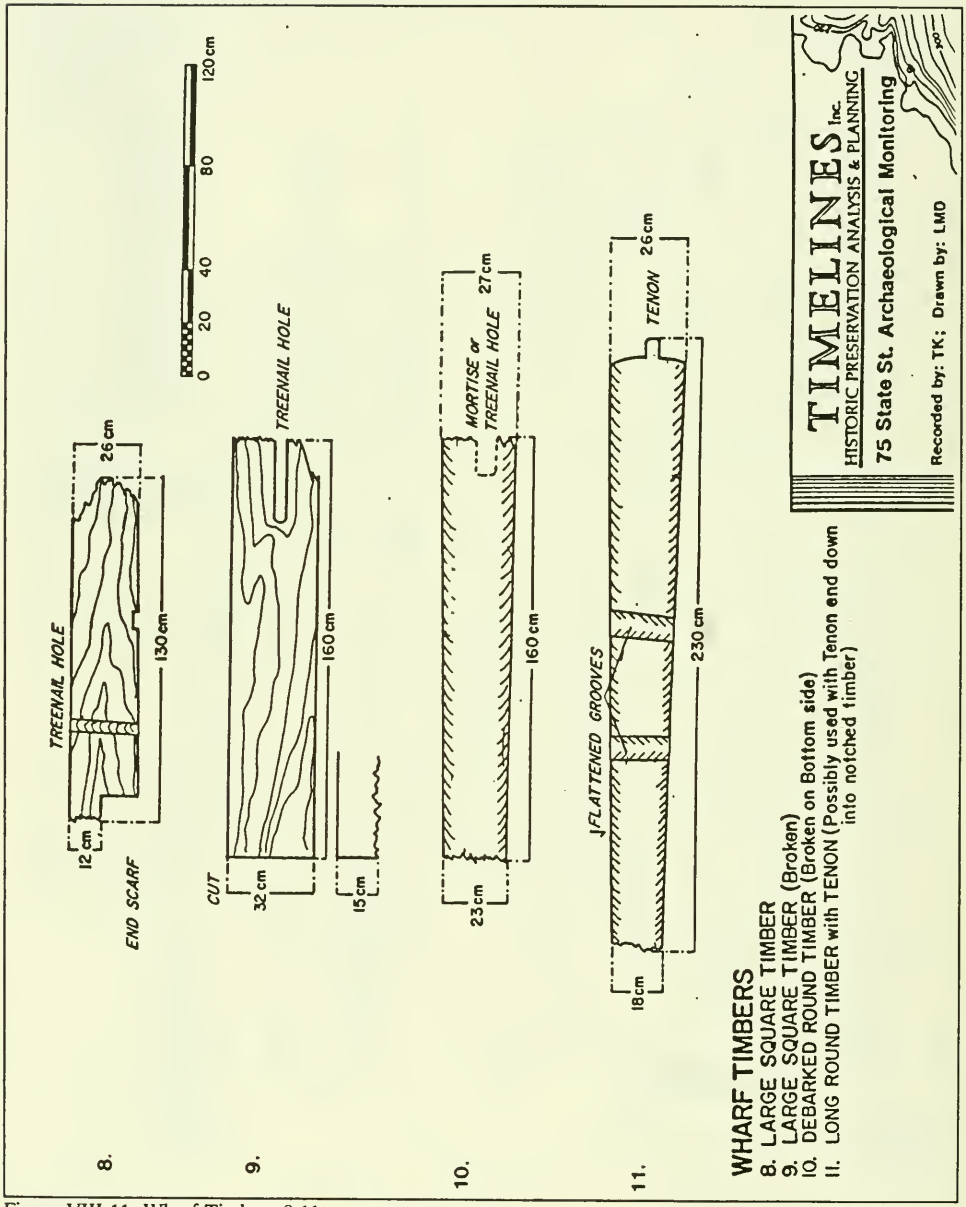
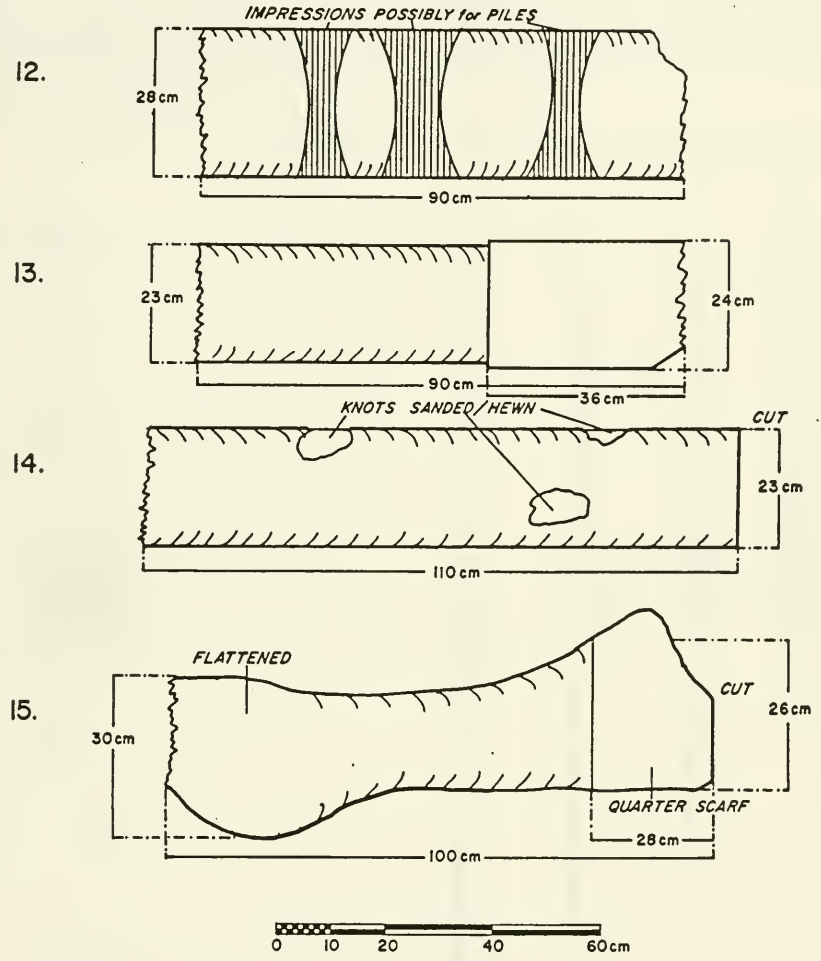


Figure VIII-11 Wharf Timbers 8-11



WHARF TIMBERS

12. LARGE ROUND TRUNK with 3 IMPRESSIONS
13. COMBINATION SQUARE and ROUND TIMBER
14. ROUND TIMBER with some BARK (possibly used in CRIBBING)
15. ODD-SHAPED ROUND TIMBER with SCARF

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HISTORIC PRESERVATION ANALYSIS & PLANNING
75 State St. Archaeological Monitoring
Recorded by: TK; Drawn by: LMD

Figure VIII-12 Wharf Timbers 12-15

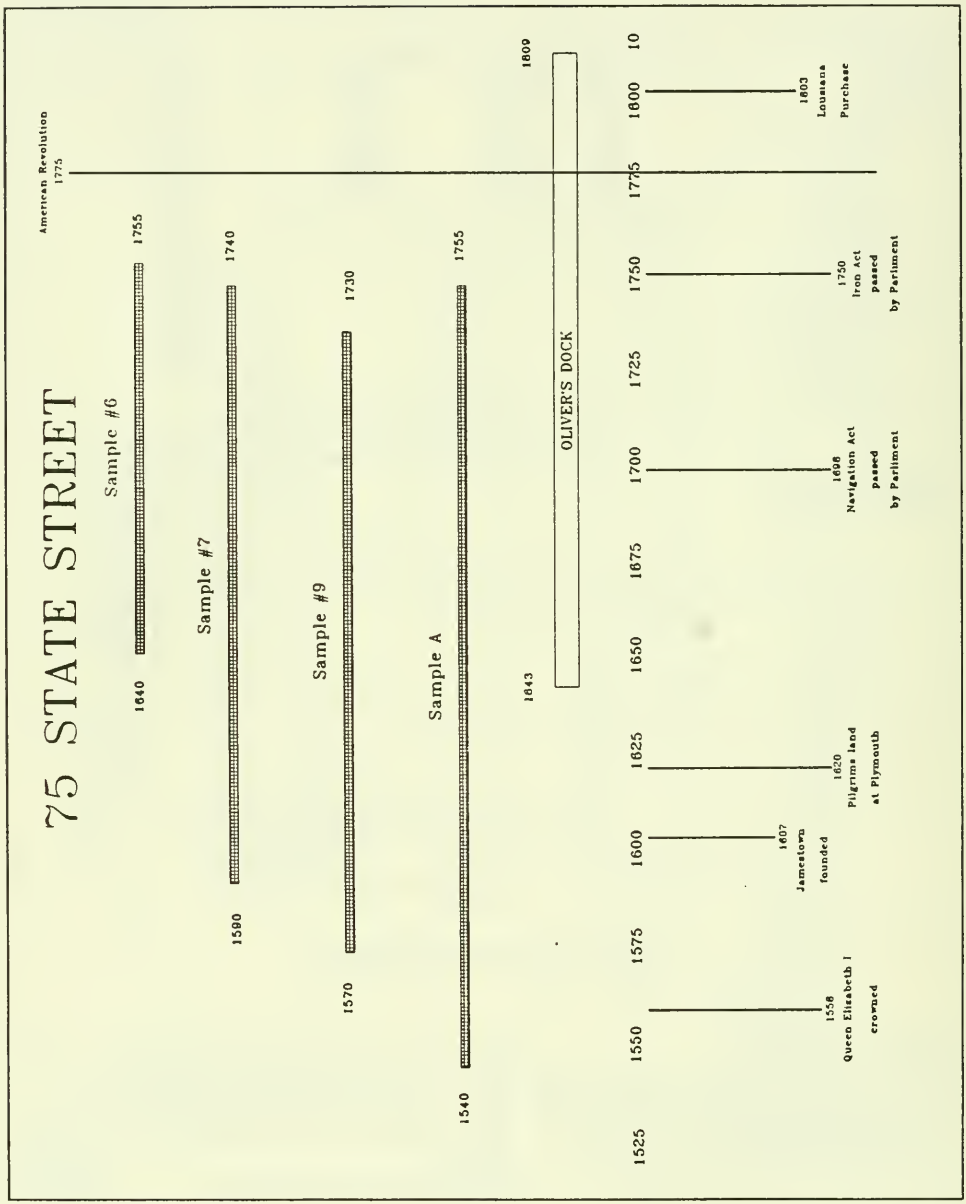


Figure VIII-13 Tree-Ring Time Line

exhibited a significant number of rings and were representative of the larger of the timbers encountered in the monitoring process. Thus we can hypothesize that the larger timbers were required in the latter stages of the Dock as a result of the increased mass of ships or some other technological factor.

Glossary of Wharf Temninology

Many of the following terms are interchangeable and can be used in British and American contexts.

Ballard - post or piling used to support cribbing or bulkhead braces; sometimes used for mooring. Also bollard.

Bulkhead brace - post or pile used to support the bulkhead.

Clay - pliable earth when wet, hardens when dry (Barnhart 1951). Clay fill associated with wharves is usually redeposited (Parker-Harris, Charlestown; N.Y.).

Cobblestone fill - usually located in the interior of the wharf, and in relation to cribbing. It is used for retention, and is sometimes called stone ballast.

Coffer dam - a curb or closed box of timber, made watertight, and fixed in the bottom of rivers, or other water, as a barrier to exclude the water during the progress of some work; used in laying the foundation of piers and abutments in deep water.

Cribbing - framework of logs or timbers used in building and wharf construction. Cribbing in wharf construction usually relates to the interior of the wharf. Square/box cribbing, N.Y., Boston; Diagonal/box, Baltimore.

Dock - a broad deep trench on the side of a harbor, or a bank of a river, in which ships are built or repaired. A dry dock has flood gates to admit the tide, and to prevent the influx, as the occasion may require. Wet docks have no flood gates, but ships may be repaired in them during the recess of the tide. Wet Docks are also constructed with gates to keep the water in at ebb tide, so that vessels may lie constantly afloat in them. The spaces between wharves are called docks.

Embankment - raised bank of earth, stones, etc., used to hold back water; can be called a revetment.

Faggots - bundles of sticks or twigs tied together (Barnhart 1951).

Headers - ends or heads of the timbers, running perpendicular from the stretchers or faces of the wharf/bulkhead. See head of timber or end when looking straight on. Can note timber conversion/cut by pattern of tree rings.

Hewn - axe-trimmed timbers used in wharf construction. Timbers are hewn for different purposes; see timber conversion chart (Cheapside; Bostonian; N.Y.).

House/Foundation cribbing - called building quay; some with revetments, tenement quays (Milne and Hobley 1981:83).

Joining members - timbers that are joined at one end or in the middle for attachment of another structural wharf member. Two notched timbers are fitted together, and sometimes a peg is used for attachment. Joint details, see Milne and Milne 1978:89.

Maritime Architecture - Wharf construction sequences and technology.

Mole - mound or massive work formed of large stones laid in the sea by means of coffer dams, extending either in a right line or an arc of a circle before a port, which it serves to defend from the violent impulse of the waves; thus protecting ships in a harbor.

Moor - put or keep (ship, etc.) in a place by means of ropes or chains fastened to the shore or anchors (Barnhart 1951).

Mooring post - post/pile used for fastening ship. At Cheapside Dock, Baltimore, the mooring post had a fag end of rope attached.

Peat - kind of turf used as fuel after being dried. Peat is made of partly rotted moss and plants. It is associated with marshland areas, and around waterfronts and wharfing. (Town Dock; Bostonian; N.Y.).

Pegging - pin or small bolt of wood (Barnhart 1951), used in wharf construction. Pegs can be used in wharf dating (large, small, rectangular, square).

Pier - a mass of stone work, or a mole, projecting into the sea, for breaking the force of the waves and making a safe harbor.

Piles - a heavy beam driven into the earth, often under water, to help support a building, bridge, or wharf.

Quay (kee) - 1) a mole or bank formed to ward the sea, or on the side of a river, for the purpose of loading and unloading vessels; 2) the French equivalent of the more uncouth English 'wharf,' and was first used in connection with the London waterfront in a deed dating from 1108 (Milne and Hobley 1981:38); 3) quays and wharves bore same primary connotation of docking facilities, "definite sense in which 'quay' came also to mean 'reclamation'" (Milne and Hobley 1981:37); and 4) a solid landing place where ships load and unload, often built of stone (Barnhart 1951).

Quayage - wharfage.

Revetment/Bulkhead - 1) in fortification, a strong wall on the outside of a rampart, intended to support the earth; 2) a facing of wood, stone, cement, sandbags, etc. as to protect a wall or bank of earth; 3) same as retaining wall. Revetments can be front-braced and/or back-braced. Examples: Medieval (Milne and Hobley 1981:41), Trig Lane (Milne and Hobley 1981:33-5), detailed wharf members (Milne and Milne 1978:89).

Ring - used for mooring a ship to a wharf/dock; usually attached to stretcher. Serves the same function as a mooring post.
Row of piles - between sleeper beams for reinforcement of interior or jetty/pier (Milne and Hobley 1981:72); can support bulkhead or buildings.

Rubbing post/Fender - for ships to rub against; keeps ship off revetment or wharf (Milne and Hobley 1981:15).

Slip/Channel - an opening between wharves or in a dock.

Small headers - or "filler" headers hold interior wharf fill back; are located between stretchers (Assay, NY). Can be round or squared.

Sleeper beams - two beams parallel, holding a line of posts/piles (Milne and Hobley 1981:78).

Slip fill - fill sequence in the slip/channel usually including a dark organic base (Town Dock, Charlestown, MA; Cheapside).

Square-built timber boxes - house foundations in deeper water (Milne and Hobley 1981:84). Also carried narrow passageways (Milne and Hobley 1981:81).

Stretchers - timbers that run length of face or perpendicular to the headers; sometimes considered the face or bulkhead. Can be round, square hewn, notched, barked or debarked.

Tree-ring dating - (dendrochronology) used for dating timbers by matching sequences of growth rings--wide in good years, narrow in bad ones. Tree-ring method for absolute dating depends on availability of dated reference chronologies. Relative dating is more common when sequences are vague. This method can be used in tracing the import of wharf timbers (Milne and Hobley 1981:39).

Wedge/Shim - fasten or tighten with a wedge; thrust or pack tightly. To fill gaps and tighten wharf timbers. Possibly could be used in repair and rebuild of wharves/docks. Seen mostly in the interior of the wharf around cribbing/sleeper beams (Town Dock; N.Y.).

Wharf - a perpendicular bank or mound of timber/stone and earth, raised on the shore of a harbor, river, or canal, or extending some distance into the water, for the convenience of loading or unloading ships and other vessels.

Wharfage - the use of wharf for mooring a ship.

Wharf sequence - extension or rebuilding of wharfing; chronology of wharf extension.

COMPARISON OF 75 STATE STREET WITH EASTERN SEABOARD AND EUROPEAN EXAMPLES

The following references are used in developing the comparisons for the photographs:

[1] Bower, Beth A., Clair Dempsey, Stephen Mrozowski, and Byron Rushing
1984 Long Wharf: Archaeological Testing of Parcel D-10. Occasional Publications in Archaeology and History No. 3, Massachusetts Historical Commission, Boston, MA.

[2] Bradley, James, Neill DePaoli, Nancy Seasholes, Patricia McDowell, Gerald Kelso, and Johanna Schoss
1983 The Bostonian Hotel Site. Occasional Publications in Archaeology and History No. 2. Massachusetts Historical Commission, Boston, MA.

[3] Courtney, T. W.
n.d. Excavations at the Royal Dockyard, Woolwich 1973-73.

[4] Harrington, Faith
1981 The Follett Site Excavation. Project completion report submitted to the National Trust for Historic Preservation. On file, Strawbery Banke, Inc., Portsmouth, New Hampshire; or Jones House Archaeological Center, Strawbery Banke Museum, Portsmouth, NH.

1983 Strawbery Banke: A Historic Waterfront Neighborhood, Archaeology, 36 (3): 52-9.

[5] Heintzelman, Andrea
1983 Construction, Material and Design of Nineteenth Century and Earlier Wharves: An Urban Archaeological Concern. Paper presented at the Society for Historical Archaeology Conference, Denver, CO.

1984 Cheapside Dock: The Heart of Baltimore's Beginnings. Baltimore Center for Urban Archaeology, Baltimore, MD.

[6] Henn, Roselle E., Diana diZerga Wall, Laurie Boros, Valerie DeCarlo, and Ted Levin
1984 "The Standardization of Wharf Construction in Federalist New York City", New York. New York City, New York.

[7] Huey, Paul
1984 Old Slip and Cruger's Wharf at New York: An Archaeological Perspective of the Colonial American Waterfront, Historical Archaeology, 18 (1): pp 15-37.

[8] Kennedy, Tim
1987 Personal Communication

[9] Milne, Gustav and Chrissie Milne
1978 Excavations on the Thames Waterfront at Trig Lane, London, 1974-6, Medieval Archaeology, XXII: pp. 84-104.

[10] Parker, Helen
n.d. A Medieval Wharf in Thoresby College Courtyard, King's Lynn, Norfolk. University of Birmingham.

[11] Wilson, Merrill Ann and Mary Jane Brady
1982 Historical Structure Report, Derby Wharf: Architectural Data. National Park Service, Denver Service Center, Denver, Colorado.

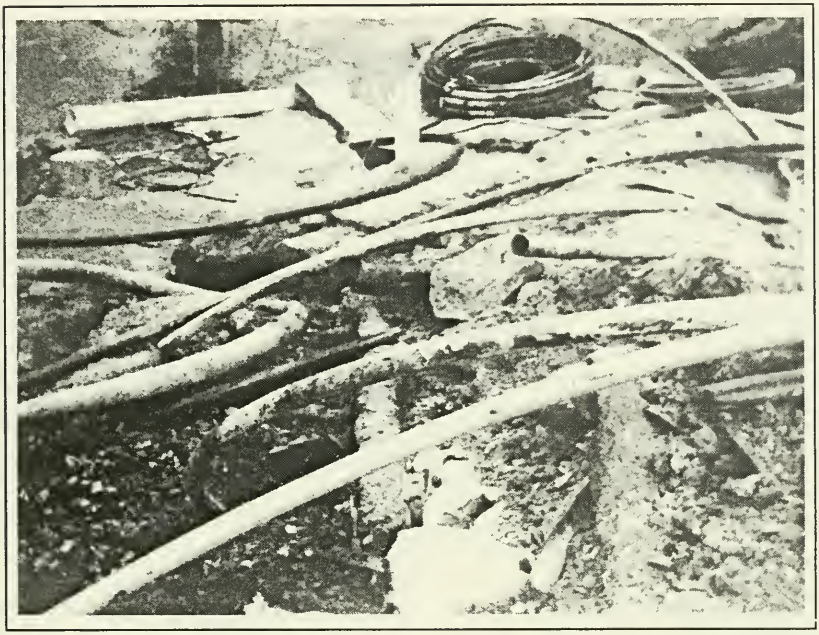


Photo 1 Intact cribbing (Oliver's Dock), Area B

Cribbing

Similar to:

Follet Site, Puddle Dock at Strawbery Banke, late 17th Century[4]
Cruger's Wharf and Old Slip, 1740s[7]
Long Wharf, early 18th Century[1]
Derby Wharf, Mid-late 18th Century[11]
Federalist New York City, 18th Century[6]

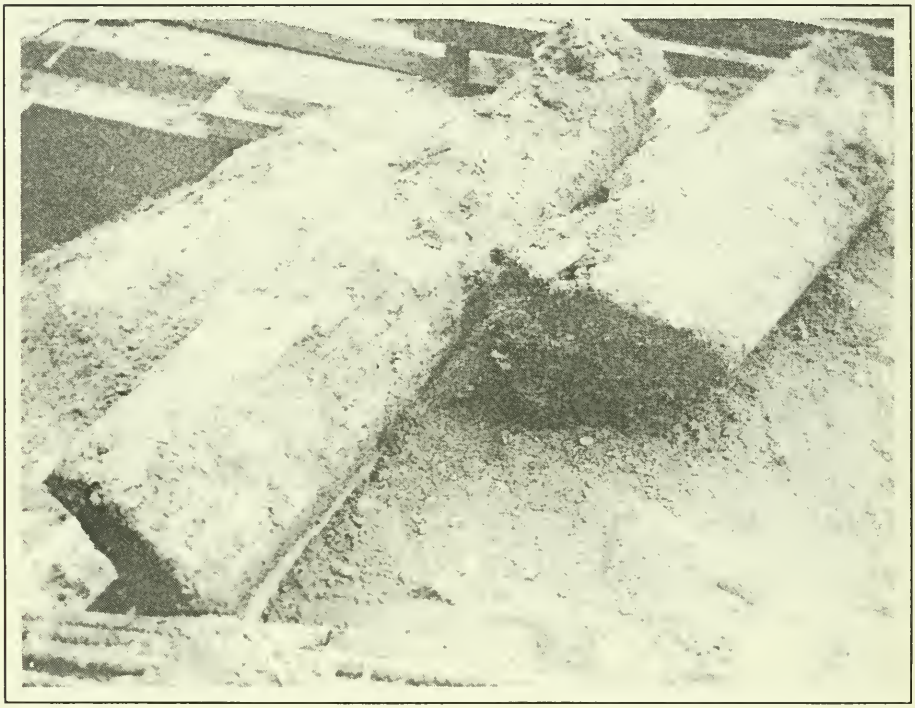


Photo 2a Large, round timber with edge-halved scarf (left), possible strut (right)

Edge-halved scarf
Similar to:
Trig Lane, 13th to early 14th Century[9]
Cheapside Dock, 1780s[5]

Strut
Similar to:
Trig Lane, end 13th to early 14th Century[9]
Cruger's Wharf and Old Slip, 1740s[7]

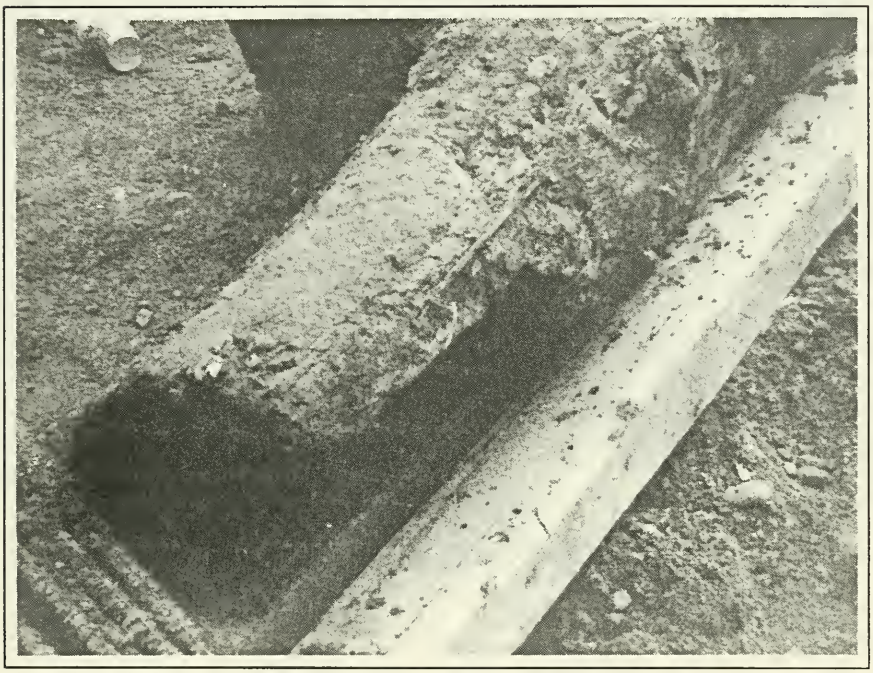


Photo 2b End of large, roughly-hewn timber with edge-halved scarf

Edge-halved scarf

Similar to:

Trig Lane, end 13th to early 14th Century[9]

Cheapside Dock - 1780s[5]

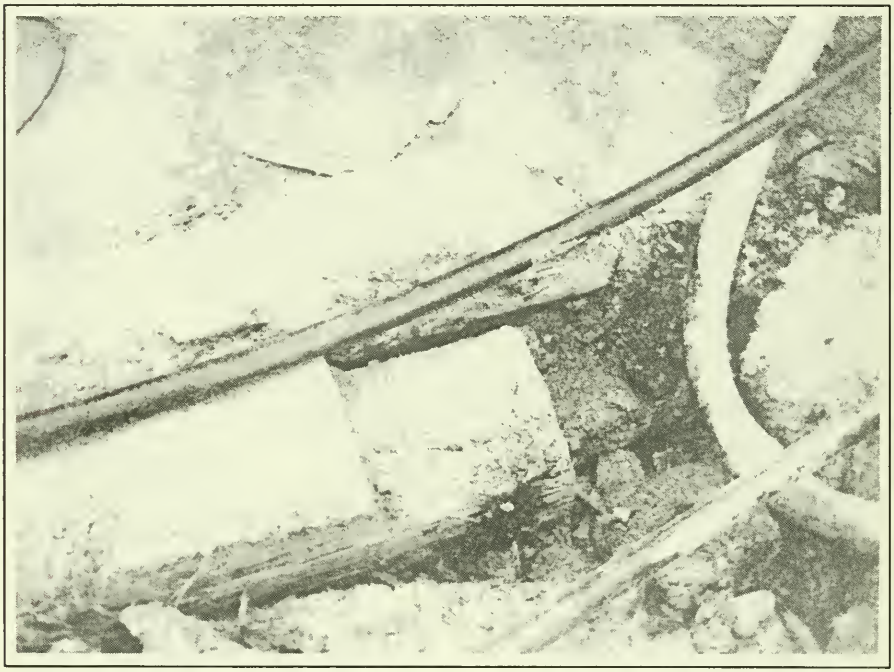


Photo 2c Disturbed/intact cribbing area and timbers, edge-halved scarf

Edge-halved scarf
Similar to:
Trig Lane, end 13th to early 14th Century[9]
Cheapside Dock - 1780s[5]

Photo 3 Stretchers with horizontal planks and pile. Poor photo

Stretchers

Similar to:

Federalist New York City, 18th Century[6]
Follet Site, Puddle Dock at Strawbery Banke, late 17th Century[4]
Cheapside Dock, 1780s[5]
Town Dock, Charlestown - 18th Century[8]

Century[10]

Horizontal Planking

Similar to:

Trig Lane, mid 13th to early 14th Century[9]
Medieval Wharf, 13th and 14th Century[10]
Town Dock - 18th Century[9]

Piles

Similar to:

Cruger's Wharf and Old Slip, 1740s[7]
Follet Site, Puddle Dock at Strawbery Banke, late 17th Century[4]
Cheapside Dock, 1780s[5]
Town Dock - 18th Century[8]
Medieval Wharf, 13th and 14th

Trig Lane, mid 13th to early 14th Century[9]

Photo 4 Strut, squared and hewn

Strut

Similar to:

Trig Lane, mid 13th to early 14th Century[9]
Cruger's Wharf and Old Slip, 1740s[7]

Squared and hewn

Similar to:

Federalist New York City, 18th Century[6]
Town Dock - 18th Century[8]
Cheapside Dock, 1780s[5]
Scottow's Wharf, late 17th Century[2]

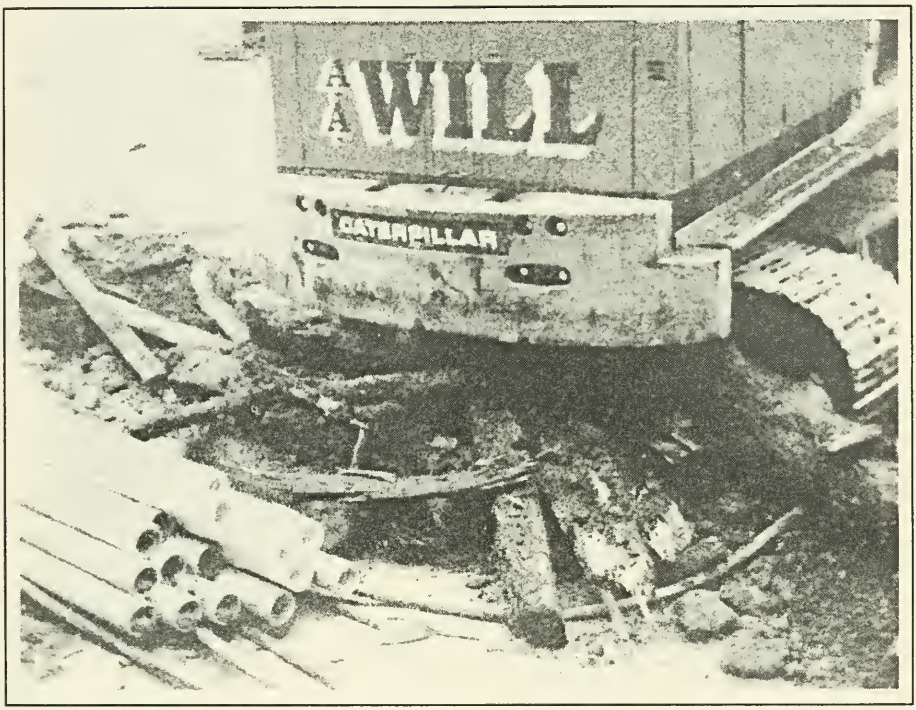


Photo 5 Miscellaneous timbers, square and round

Tiebacks

Similar to:

Trig Lane, mid 13th to early 14th century[9]
Federalist New York City, 18th Century[6]
Town Dock - 18th Century[8]
Cheapside Dock, 1780s[5]
Medieval Wharf, 13th and 14th Century[10]

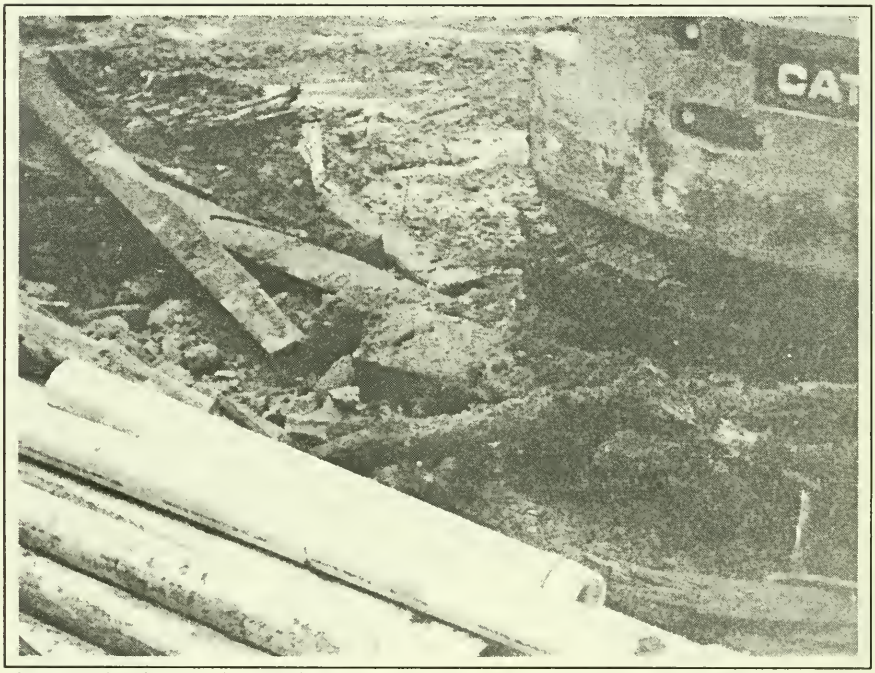


Photo 6 Miscellaneous timbers, tiebacks (upper left)

Tiebacks

Similar to:

Trig Lane, mid 13th to early 14th century[9]
Federalist New York City, 18th Century[6]
Town Dock - 18th Century[8]
Cheapside Dock, 1780s[5]
Medieval Wharf, 13th and 14th Century[10]

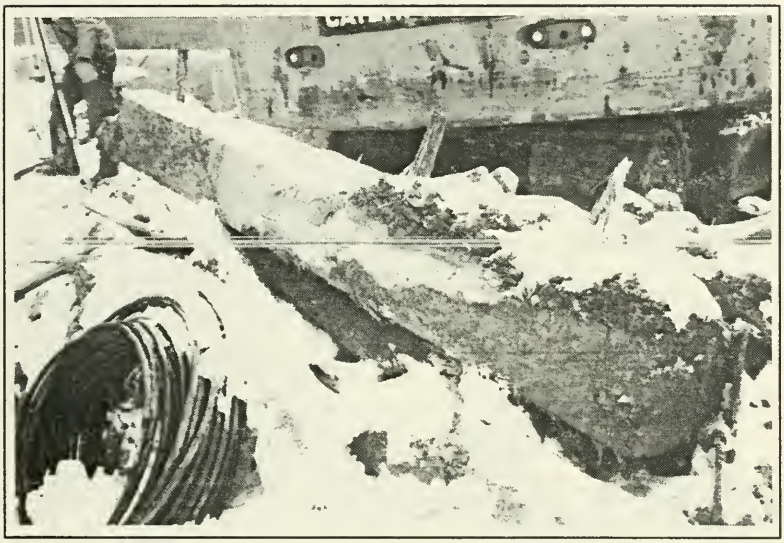


Photo 7 Large squared timber with rectangular pegs/treenails. Possible face timber.

Pegging

Similar to:

Federalist New York City, 18th Century[6]
Follet Site, Puddle Dock at Strawbery Banke, late 17th Century[4]
Town Dock - 18th Century[8]
Trig Lane, mid 13th to early 14th Century[9]

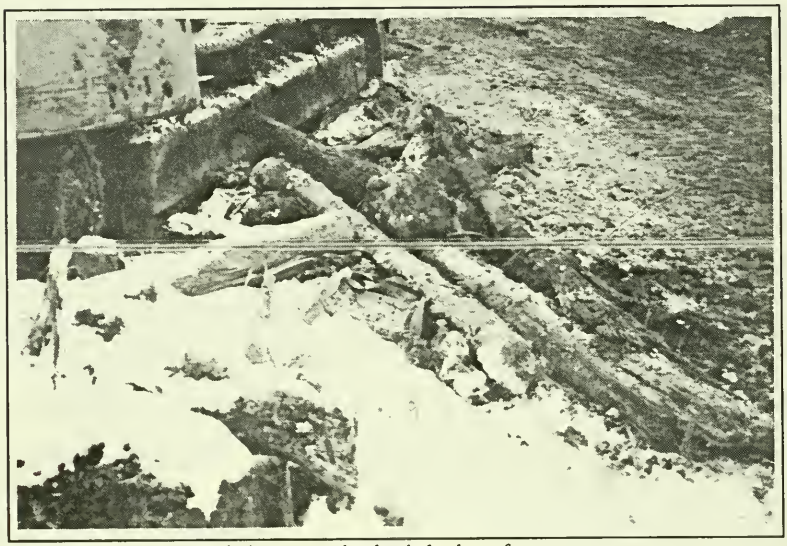


Photo 8 Miscellaneous timbers, round, edge-halved scarf

Edge-halved scarf

Similar to:

Trig Lane, mid 13th to early 14th Century[9]

Cheapside Dock, 1780s[5]

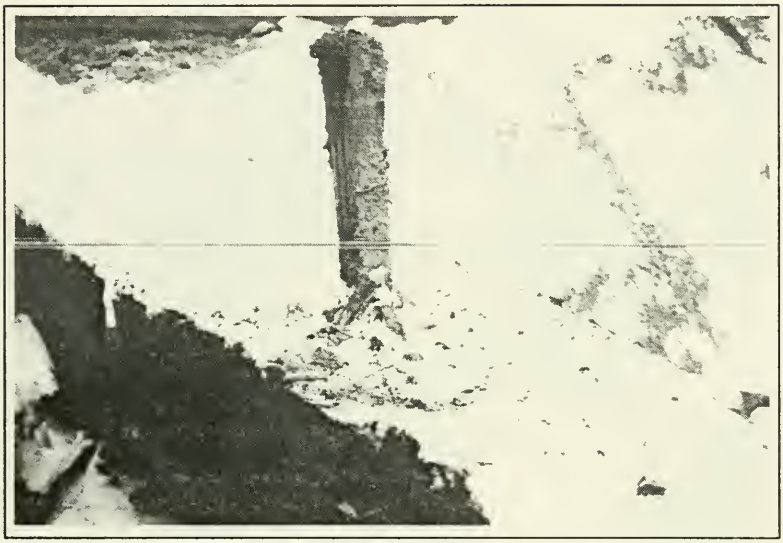


Photo 9 Close-up of peg/treenail in large squared timber

Pegging

Similar to:

Federalist New York City, 18th Century[6]
Follet Site, Puddle Dock at Strawbery Banke, late 17th Century[4]
Town Dock - 18th Century[8]
Trig Lane, mid 13th to early 14th Century[9]

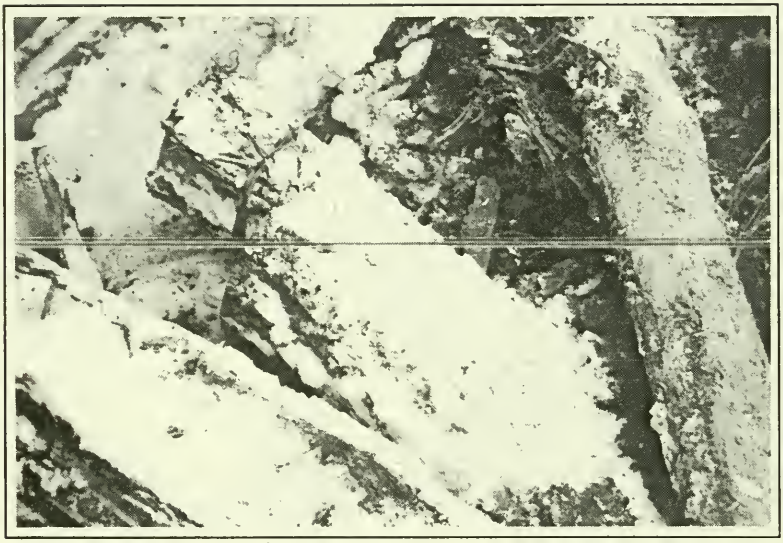


Photo 10 Edge-halved scarf timber, flagged

Edge-halved scarf

Similar to:

Trig Lane, mid 13th to early 14th Century[9]
Cheapside Dock, 1780s[5]

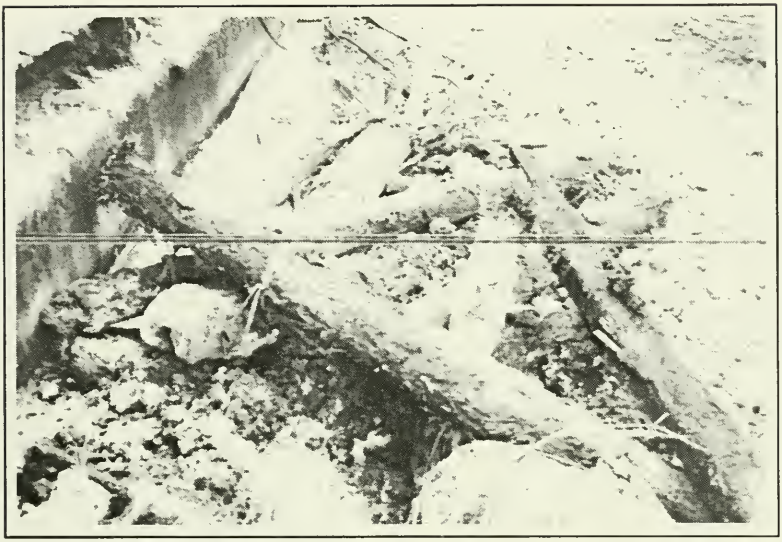


Photo 11 Round pile, flagged

Piles

Similar to:

Cruger's Wharf and Old Slip, 1740s[7]
Follet Site, Puddle Dock at Strawbery Banke, late 17th Century[4]
Cheapside Dock, 1780s[5]
Town Dock, Charlestown - 18th Century[8]
Medieval Wharf, 13th and 14th Century[10]
Trig Lane, mid 13th to early 14th Century[9]

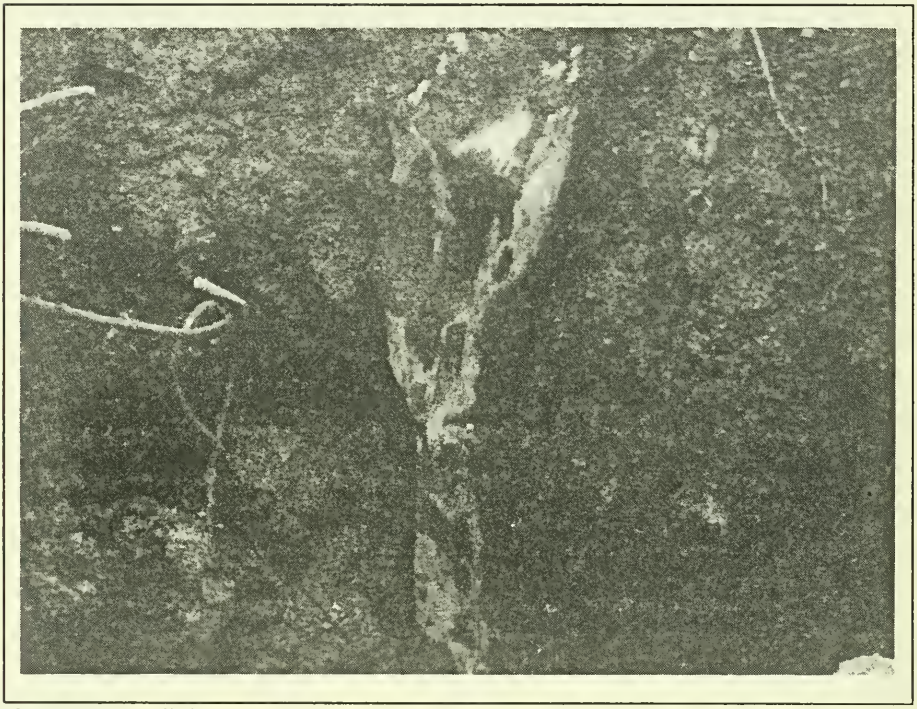


Photo 12 Large pile/post

Piles

Similar to:

Cruger's Wharf and Old Slip, 1740s[7]
Follet Site, Puddle Dock at Strawbery Banke, late 17th Century[4]
Cheapside Dock, 1780s[5]
Town Dock, Charlestown - 18th Century[8]
Medieval Wharf, 13th and 14th Century[10]
Trig Lane, mid 13th to early 14th Century[9]

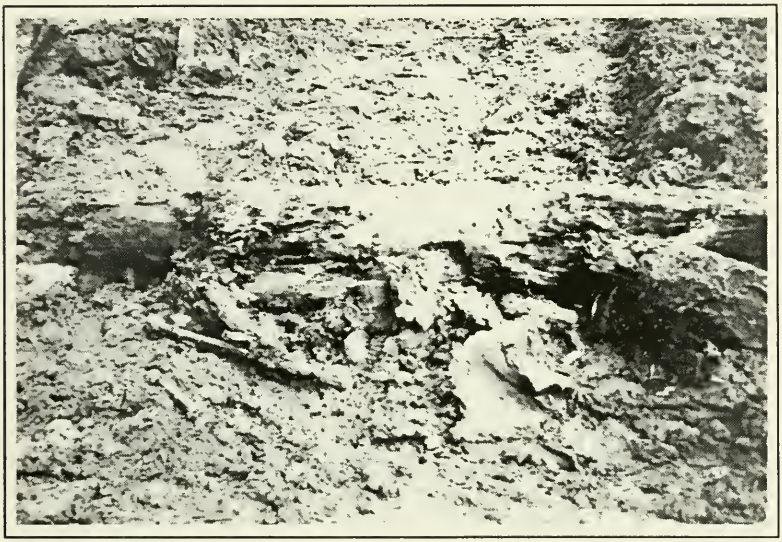


Photo 13 Small, round pile, possible fill

Timber Fill
Similar to:
Town Dock, Charlestown - 18th Century[8]

Photo 14 Tree trunk, as fill

Timber Fill

Similar to:

Town Dock, Charlestown - 18th Century[8]

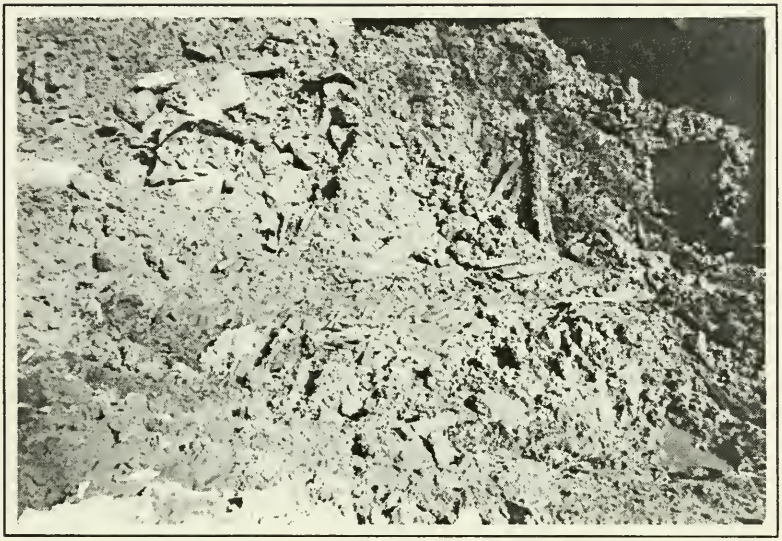


Photo 15 Possible building quay, close timbers; some planks

Building Quay
Similar to:
Long Wharf, early 18th Century[1]
Parker-Harris, Charlestown - 18th Century[8]

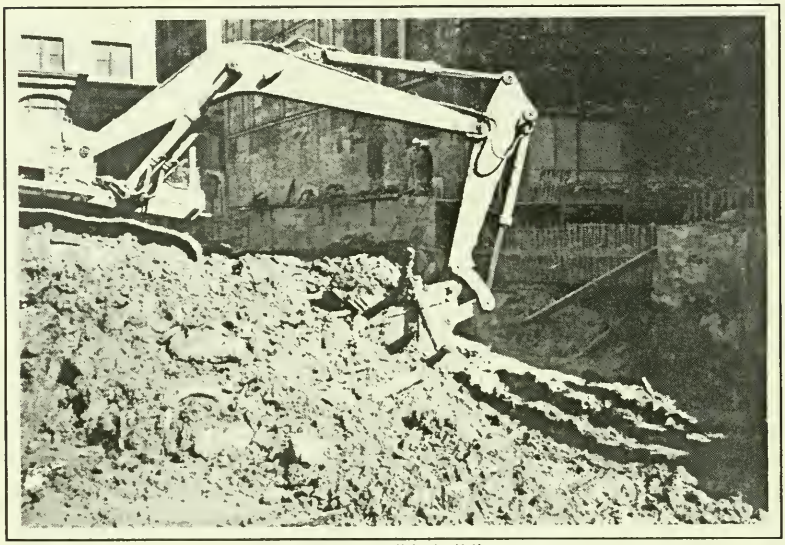


Photo 16 Backhoe with round timbers, possible building quay

Building Quay
Similar to:
Long Wharf, early 18th Century[1]
Parker-Harris, Charlestown - 18th Century[8]

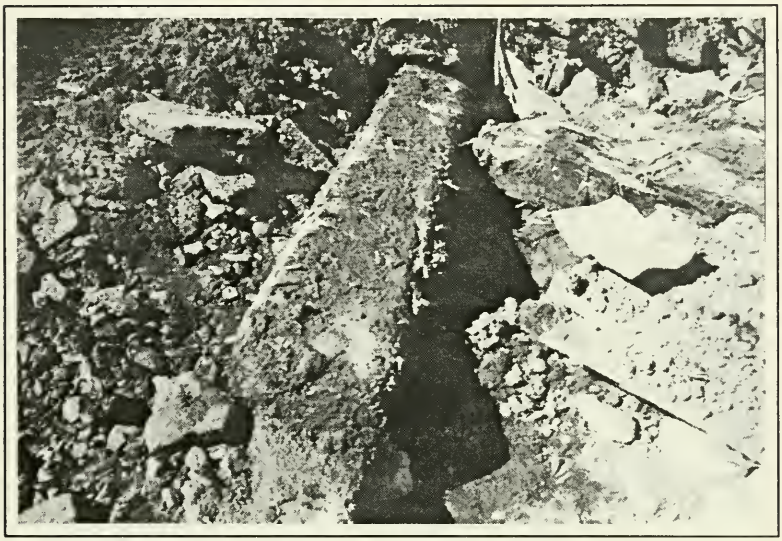


Photo 17 Squared timber with edge-halved scarfs and half lap.

Edge-Halved Scarf

Similar to:

Trig Lane, mid 13th to early 14th Century[9]

Cheapside Dock, 1780s[5]

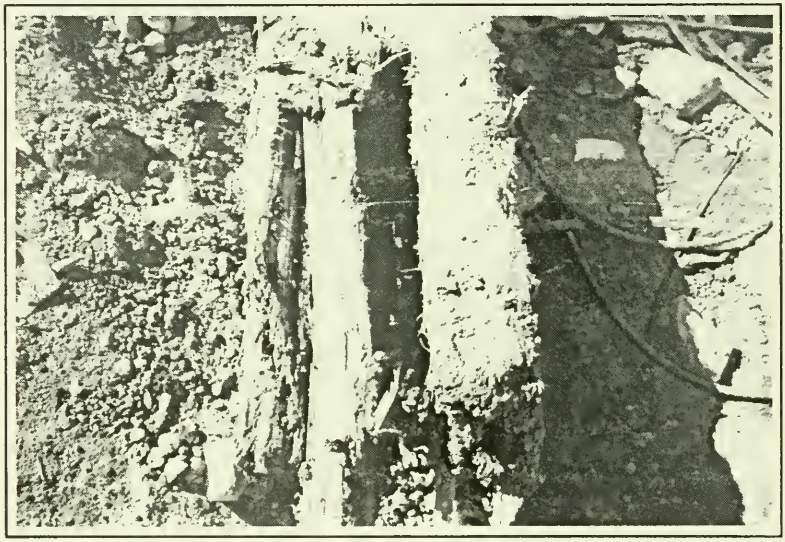


Photo 18 Close-up of half lap/center notch

Half-Lap

Similar to:

Trig Lane, mid 13th to early 14th Century[9]
Cheapside Dock, 1780s[5]
Town Dock, Charlestown - 18th Century[8]

Photo 19 Edge-halved scarf with peg hole

Edge-Halved Scarf

Similar to:

Trig Lane, mid 13th to early 14th Century[9]

Cheapside Dock, 1780s[5]

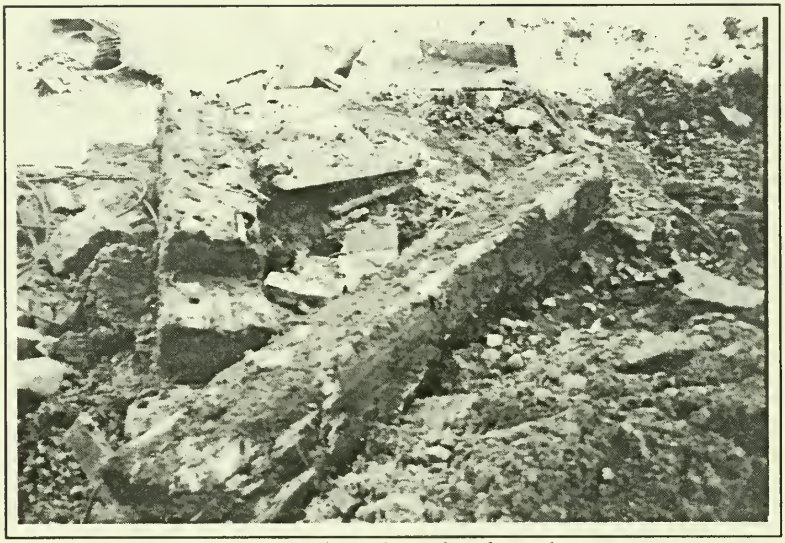


Photo 20 Edge-halved scarf one end; mortise at the other end

Mortise

Similar to:

Follet Site, Puddle Dock at Strawbery Banke, late 17th Century[4]

Town Dock, Charlestown - 18th Century[8]

Trig Lane, mid 13th to early 14th Century[9]

Royal Dockyard, 15th Century[3]

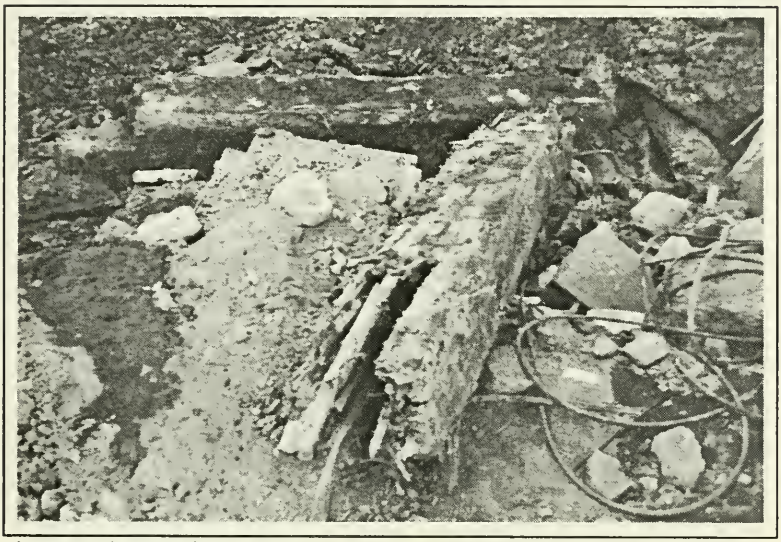


Photo 21 Close-up of mortise

Mortise

Similar to:

Follet Site, Puddle Dock at Strawbery Banke, late 17th Century[4]
Town Dock, Charlestown - 18th Century[8]
Trig Lane, mid 13th to early 14th Century[9]
Royal Dockyard, 15th Century[3]

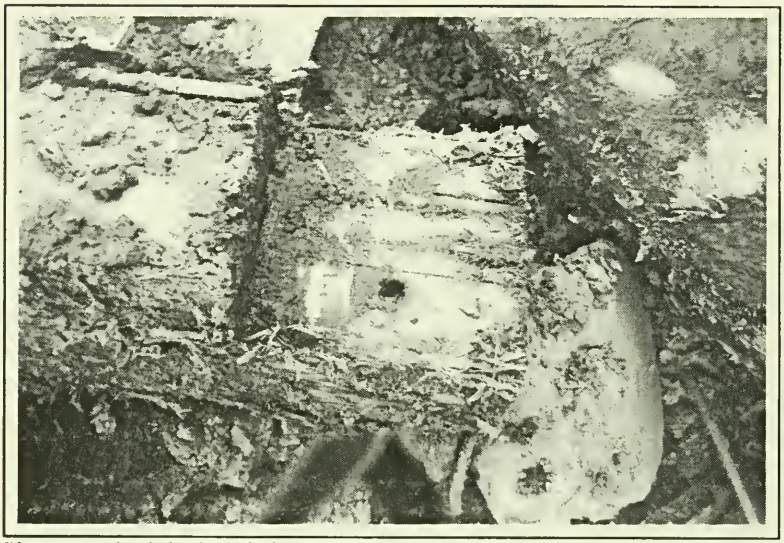


Photo 22 Edge-halved scarf with peg indentation

Edge-halved scarf
Similar to:
Trig Lane, end 13th to early 14th Century[9]
Cheapside Dock - 1780s[5]

2. Tree-Ring Dating - by Joel Snodgrass

The following portions of this section were prepared by Joel Snodgrass of the Tree-Ring Laboratory at Lamont-Doherty Geological Observatory (TRL/LDGO) of Columbia University, Palisades, N.Y. They are based on a dendrochronological investigation of samples taken from 75 State Street (Colonial Wharf Project), Boston, Massachusetts. Site specimens were selected and extracted by Michael Roberts and Tim Kennedy in the late spring of 1987 in consultation with Linda Ulan of TRL/LDGO. These samples were approximately 2½ to 3 inches thick with a clean cut on both ends (see Figure VIII-14). These samples were packed and shipped to the Tree-Ring Laboratory for analysis in the fall of 1987.

Figure VIII-14 Tree-Ring Sample Being Extracted from Wharf Timber

Introduction

Dendrochronological dating in temperate regions is based on the very strong tendency for trees to form one identifiable radial growth increment or tree-ring each year. The width of the ring is determined by many influences such as moisture, temperature, competition, soil, and the age, size, and general vigor of the tree. The first two factors, moisture and temperature, result from climatic conditions and variations. These are consistent throughout regions of various sizes depending on topography, proximity to large water bodies (lakes or oceans), and storm tracks or air mass movements. As moisture and temperature vary from year to year within what is termed a climatically homogenous region, they will have a similar effect on most trees of a certain species in the region. If these effects predominate

over the other effects on growth, the ring-width patterns will match to a recognizable degree for a species in a region.

Trees growing on poor soils or in exposed environments generally respond more to climatic variations. Trees growing on good soils and in sheltered environments may show little ring-width variation in response to climate and thus may not produce very distinctive patterns.

Dendrochronology involves correct dating (accounting for missing rings and false rings) and matching of patterns between tree samples to determine the exact year of growth for rings of interest. The actual measuring and processing of tree-ring data involves high-precision measuring equipment, computer processing, and various statistical and graphical analyses. In applying this science to dating of historical structures and archaeological specimens, the main interest is the last year of growth, or the date of cutting down the tree for use in a structure. This dating is accomplished by comparison of data from samples taken from the structure of study against previous data developed from living trees or other structures.

The purpose of this investigation was to reveal, whenever possible, end year dates for the various specimens supplied in order to determine dates of construction. Such information would lend insight as to the interrelationship between the specimens, and to better understand the contextual arrangement in which they were employed.

Methodology

Site investigation and sample extraction was executed by Timelines, Inc., and selected specimens (wharf piling cross-sections) for analysis were delivered to TRL/LDGO in the fall of 1987. Upon sample delivery, it was necessary to allow all wharf samples to air dry for a period of time at room temperature, as they were wet when obtained, thus making sample preparation difficult.

After sufficient drying, all sample specimens (15 total) were identified and categorized under both Timelines, Inc. field numerical designations and TRL/LDGO numerical designations for the purpose of maintaining consistency with TRL/LDGO's computer coding system. Samples were prepared by first sawing cross-sections to a thickness of approximately 2 in. for ease of examination. Then each surface was sanded with a series of increasingly fine grit sandpapers to produce a smooth, polished surface, exposing details of the wood anatomy.

Once a proper surface for examination had been achieved, all the individual ring widths for each sample were measured using a computerized dendrometer developed at TRL/LDGO. This measuring device is comprised of a Teledyne-Gurley linear encoder and pulse stretcher, attached to a Velmenx, Inc. translation device with extruded aluminum base and metric lead-screw slide mechanism, and a calibrated glass slide micro-scale. This system is linked to a standard Apple II Plus computer using modified measuring software from CompuTA, and is capable of measuring to within a precision of ± .001 mm. In this study and most others, a precision of only ± .01 mm was needed. Ring measurements were monitored with

a standard boom-mounted Bausch & Lomb variable zoom (10x - 70x) stereo-microscope and Fiberoptic Specialties, Inc. Torin TA300S fiber-optic light source. Ring width measurements were then transferred to the main PDP-VAX Digital Microvax I main-frame computer via Softerm-2 configuration software.

Upon completion of all data transferring, a series of tree-ring analysis computer program comparisons was executed. Comparisons were made upon evaluation of three cross-dating programs used at TRL/LDGO, including programs CROS, GLADWIN, and COFECHA. Program CROS provides a method for cross dating through examination of correlation coefficients, percentage agreements, and values of overlap between different ring series. Program GLADWIN (developed at TRL/LDGO) provides a method that incorporates European and American cross-dating techniques in representing all year-to-year ring width variations above a certain percentage of relative change and then combines them in a time series of growth change, useful for specimen ring-width intercomparisons. Finally, program COFECHA provides a method of identifying data that may contain possible inherent dating errors through sequential examination of all ring series, thereby confirming the accuracy of dating and measurement.

Specimen comparisons can then be determined through examination of the derived data base generated by computer analysis, in combination with visual analysis of both computer-assisted and hand-generated graphical ring-width series plots. The inherent chronological data of the sample specimens are assessed on the basis of the ability to cross-date, and thereby establish chronological relationships, internally within the sample group. The data are then assessed for ability to cross-date externally in relation to existing tree-ring chronologies, and thereby reveal a possible connection with a fixed period of time.

Assessment

The relative success of any dendrochronological investigation is dependent on a number of factors that are often subject to qualitative and quantitative changes due to variations in species, specimen quality, site climate and historical conditions. While the ability correctly to cross-date sites in midwestern and other eastern regions has been quite good, dendrochronological investigations conducted in the coastal northeastern section of the continent, such as eastern Massachusetts, have been difficult. This can be attributed to a lack of, or absence of access to, extant historic stands of pertinent living tree species that can be employed as a foundational data base for comparison. These historic stands should be located within close proximity to the specimen site being investigated.

The specimen tree species of the 75 State Street (Oliver's Dock) project, located in the downtown area of Boston and thus directly on the Massachusetts coastline, appear to fall into a similar situation. The wharf piling samples themselves appear to consist primarily of eastern white pine (Pinus strobus), with the exception of a small number of white oak (Quercus alba) samples. Both eastern white pine and white oak are indigenous to the northeastern region and historically were widely used as building materials, because of their local availability. For this reason it is highly possible that the wharf samples did in fact

originate from locally harvested wooded areas. However, in the absence of a high-quality, well-replicated locally derived "master" tree-ring chronology of the same tree species, an alternative approach was undertaken, cross-dating the specimens with the strongest existing tree-ring chronology of the same species located within the closest proximity. This was also attempted with existing tree-ring chronologies of the same species located further inland. However, the tree-ring chronologies from northeastern inland areas, although of the same species, represent fluctuations of an interior continental type of climate that is significantly different from the climate of northeastern coastline areas, strongly influenced by their maritime environment.

In order to produce a sound data base for the investigation site, a minimum number of specimens was needed to increase the accurate representation of the site tree-ring chronology. The wharf piling sample set was acceptable as per the number and type of specimens provided. Generally, cross-sectioned samples like those provided are, if available, the most advantageous sample type as they afford the opportunity for close examination of the growth pattern of each specimen over the entire circumferential area, and thus can be analyzed in greater detail. However, in addition to a requirement of a minimum number of samples for successful comparison, a minimum number of tree-rings per sample is also necessary for adequate cross-comparison purposes. While some of the samples appeared to be quite good, containing a large number of tree-rings, the number of tree-rings found on over one-third of the sample set was quite low. Therefore the continuity, or degree of internal overlap within the sample set was somewhat reduced.

In addition, the fact that the sample set was comprised of more than one tree species could reduce the relative value of the set for comparative purposes, although some cross-comparisons could be made. No two species have identical responses to climate and thus their growth patterns are not identical. The relatively scarce samples of white oak, which in some cases is a very reliable tree species for dating purposes, unfortunately contained some of the smallest numbers of tree-rings in the entire set, reaching only a minimum level of acceptance. The strength of those samples for cross-dating and interspecific comparison purposes, was therefore low.

The majority of remaining samples, being comprised of eastern white pine, displayed a wide range in the number of tree rings per sample. Eastern white pine by nature has a less reliable response to climatic variations than white oak, and thus does not normally display growth-ring variations that are as distinct in similar climatic conditions. In addition, examination of the samples revealed that the respective growth variations were generally small and non-stressed, suggesting that the trees had possibly originated from sites with favorable growing conditions and good soil. In addition, eastern environments typically yield tree growth that is generally not stressed by climate, and is therefore less sensitive to climatic changes, producing uniform rings or complacent ring-width patterns. Unfortunately, this condition is by nature often the most difficult situation in which to obtain conclusive cross-dating.

Summary

Upon completion of a series of computer cross-dating programs, including program CROS, program GLADWIN, and program COFECHA, used to confirm both internal and external cross dating, the wharf piling sample set appeared to be comprised of timbers that possibly date to a range of different time periods. However, successful cross-dating between four samples was achieved within the wharf pilings. The apparent lack of internal cross-dating between the remaining wharf samples may be attributed to either the small number of tree rings per sample or possibly the introduction of these timbers into the site during another time period. As was common in wharf construction and maintenance, timbers that had been damaged through normal use were periodically repaired or replaced. The problem of attempting to cross-date between the two different tree species found in the sample set (see above) further complicates this situation.

The internal cross-match of four wharf timbers (sample Nos. 00A [TL#A-1], 0A1 [TL#9-1], 0B1 [TL#7-1], and 0C1 [TL#6-1]) thereby allowed a fixed overlap interrelationship or "floating" tree-ring chronology that spans a time period of 198 years. This internal floating tree-ring chronology was then compared with a series of extant master tree-ring chronologies for cross-dating purposes. Tree-ring series from living eastern white pines growing in the Adirondacks in New York and in Maine were tested with the wharf samples and no apparent dating was achieved. A series or master chronology from Carlisle Woods and a nearby historical structure in eastern Massachusetts was more successful. Upon extensive computer analysis, preliminary external cross-dates were matched to the mid eighteenth century. Confirmatory testing further supported a tentative end-year date of 1745 for sample No. 0BB (TL# B-2) of the wharf pilings, while evidence strongly suggested end-year dates for other wharf samples near to this date. It should be emphasized that the word tentative is important because the portion of the master tree-ring chronology used to establish these dates only comprises one living tree and two structural timber cores from 1751 and earlier. Therefore, this date may not be entirely reliable. TRL/LDGO is in the process of adding more samples to the early portion of the master eastern white pine tree-ring chronology for this area. Living trees of this age are unfortunately virtually nonexistent.

It should be noted that the majority of the outer surfaces of the wharf samples had been significantly abraded over time, most probably through normal use, and may have lost some of their respective tree rings, or outer years, in the process. Thus, it is highly likely that the derived dates may in fact be short of the actual end-year or cutting dates. This premise is further supported upon review of the construction and maintenance history for the wharf areas. Although the earliest phase of construction was apparently in the mid seventeenth century, two successive fires in 1679 and 1760 both required phases of rebuilding of the wharf areas. It is quite possible that the tentative end-year dates, in conjunction with the possible loss of outer years on the wharf samples, may relate to a rebuilding phase after the great fire of 1760.

It should be noted that the fixed-time master chronologies used at TRL/LDGO for analyzing potential datable sites, are continually being expanded and strengthened as more

data are made available for processing. As the data base increases, the proportionate rate of success is also potentially greater. TRL/LDGO currently has additional sample sites of eastern white pine from this region that are in the process of being entered into the main computer data base. However, the scope of work and time allotted for this particular wharf-timber project did not make it possible to include this additional information in the master tree-ring chronology data base, which might have contributed to the assessment of the submitted samples. Thus it should be noted that further examination will be necessary before a complete assessment regarding the contextual placement of the wharf piling samples can be properly executed.

Correlation Between
Timelines Sample Numbers
and
Lamont-Doherty Geological Observatory
Sample Numbers

Timelines Sample No.	Section	Lamont-Doherty Geol. Observatory Sample No.
A	1	00A
9	1	0A1
7	1	0B1
6	1	0C1

Figure VIII-15 - Correlation Table

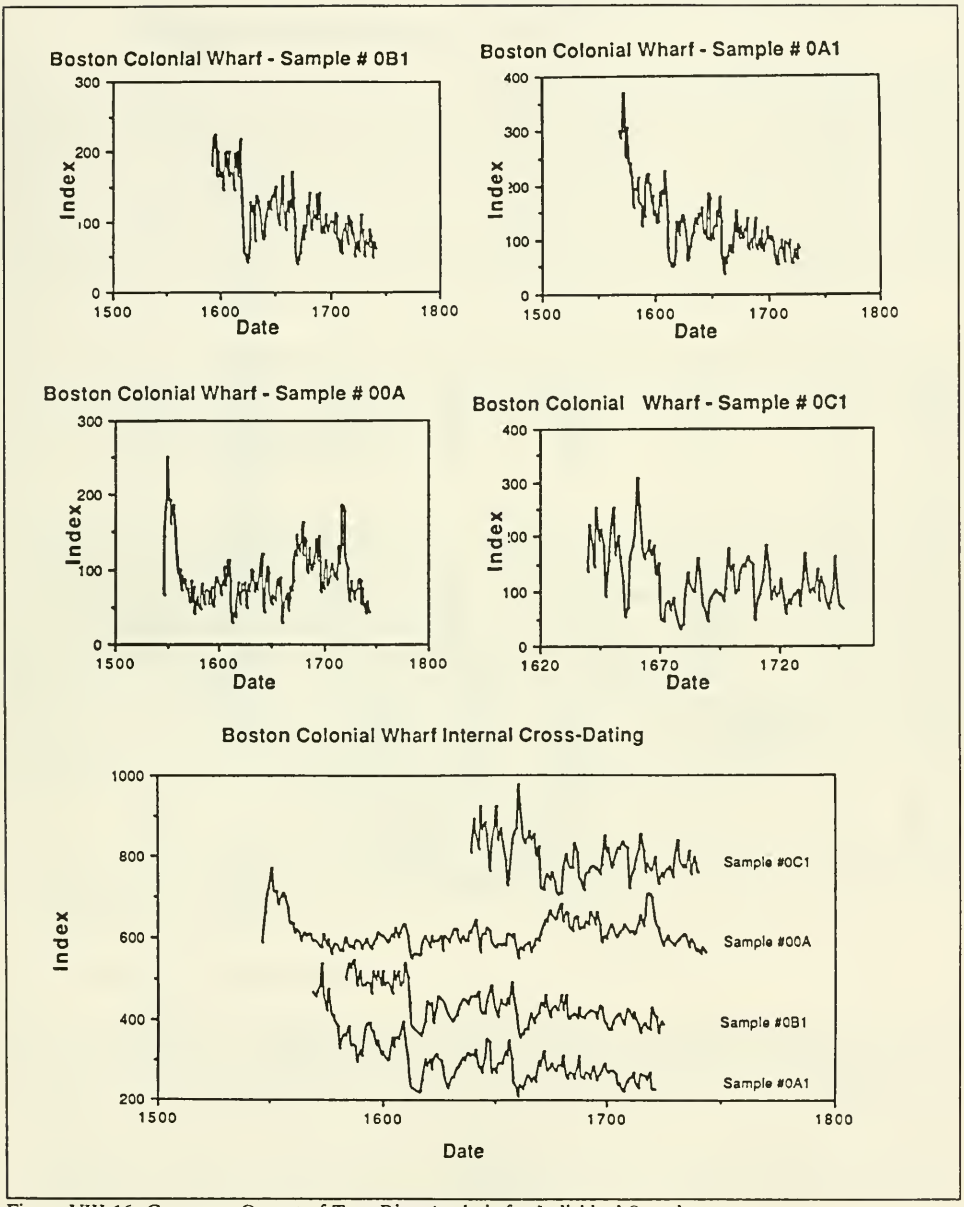


Figure VIII-16 Computer Output of Tree-Ring Analysis for Individual Samples

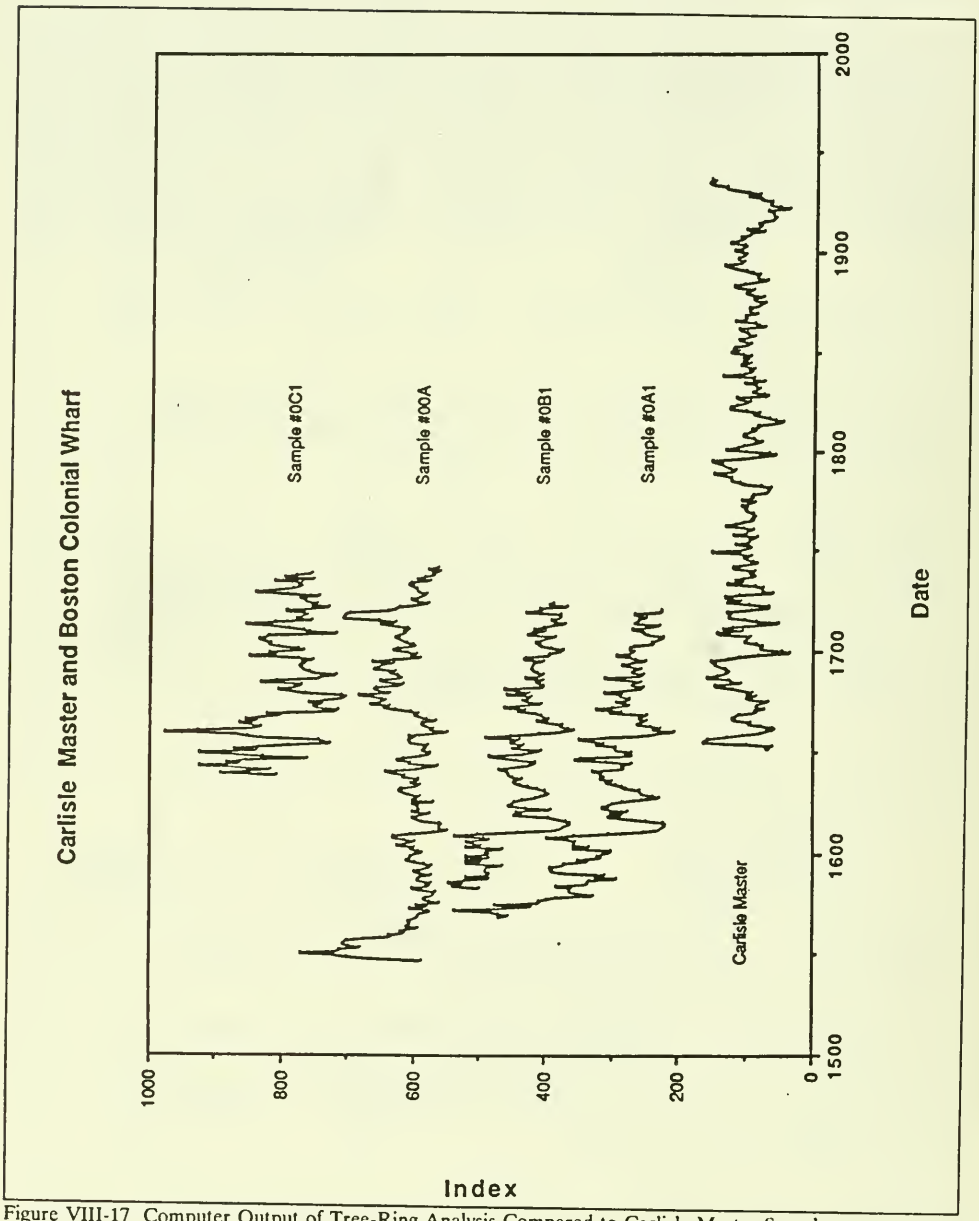


Figure VIII-17 Computer Output of Tree-Ring Analysis Compared to Carlisle Master Sample

3. Conclusions - by Tim Kennedy

Many archaeological features were located and recorded, specifically wharfing and building cribbing. Since no artifacts were recovered, a specific date was hard to obtain. Research on other timber cribbing showed a similarity in construction technique. The following are some of the best articles on construction and technique: 1) Mary Jane Brady, "The Construction of Marine Structures in New England Prior to 1900," 1978; 2) Faith Harrington, "Strawbery Banke: A Historic Waterfront Neighborhood," 1983; 3) Andrea Heintzelman, "Colonial Wharf Construction: Uncovering the Untold Past," 1986; 4) "The Standardization of Wharf Construction in Federalist New York City," 1984; and 5) Gustav Milne, "Excavations on the Thames Waterfront at Trig Lane, London, 1974-6," 1978.

The timbers, cribbing, and granite blocks of Oliver's Dock, in the southern part of the site, illustrate the similarities among eighteenth-century wharfs (Trig Lane, Cheapside, Town Dock). The locations of excavated and intact wharfing seem to line up from west to east (Fig. VIII-18). Comparison of Figure VIII-18 with the historical maps shows that the documents were relatively accurate.

Wharf timber notching (struts, tiebacks, mortises, tenons) in the members excavated is very similar to that of timbers from Trig Lane. Notching of this kind was used as early as the thirteenth century in Europe (Milne and Milne 1978). Figures VIII-19 to -21 show representative examples of these components from European sites. The timbers located on the west side of Oliver's Dock were short and heavy, which leads us to believe that the shoreline was close. We assumed that shorter, heavier timbers were probably used near the shoreline for stabilization. But later we found that since there were very few cobblestones excavated, the following excerpt might offer a better explanation: "The distinction between cobbwork and cribwork is a fine one. Usage of the word cobbwork seems to refer to the earlier and lighter timber construction with fewer heavy timbers and ballast of rubbles and cobbles. The ultimate distinction may be strictly semantic" (Brady 1978).

In the area of Doane Street, no wharfing was located, but building quay or cribbing that underlay a previously demolished building was excavated. This type of tight, corduroy cribbing is common in both wharfing and building stabilization (Town Dock, Parker-Harris, 175 Water Street, Britain).

B. Original Shoreline Position

During the field work described above we were constantly on the lookout for direct evidence of the location of the original shoreline of Boston as it was when first occupied by European settlers. Our monitoring activities did not discover any direct evidence of shoreline. The middle and north parts of the site were disturbed by nineteenth- and twentieth-century structures and fill. The only area that may have preserved some of the original shoreline was by Oliver's Dock in the southwest corner of the site. The cement/rebar bulkhead in the excavation of 2/29/87 may have cut into the original shore clay (blue marine clay). The clay was located below and west of the bulkhead.

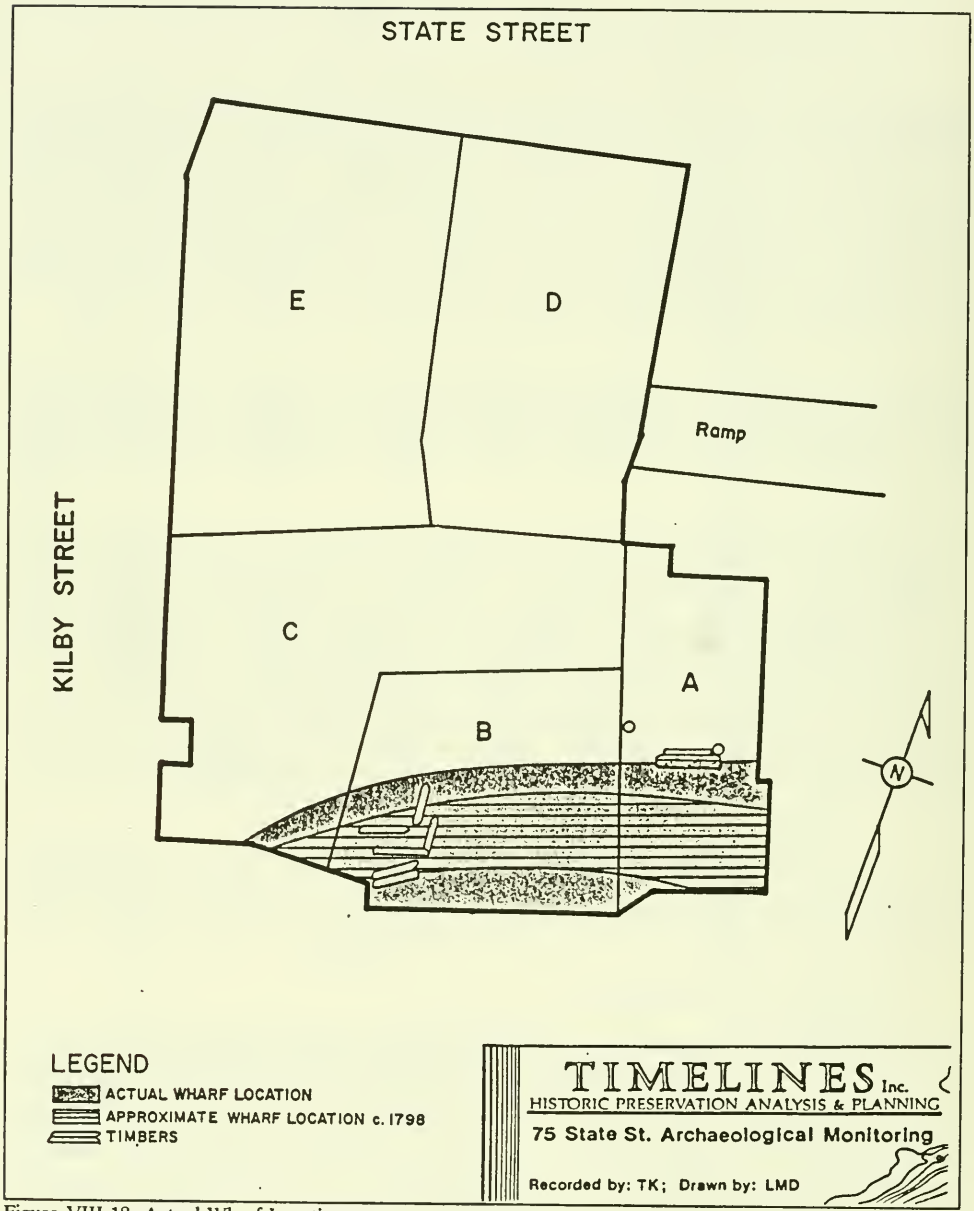


Figure VIII-18 Actual Wharf Location

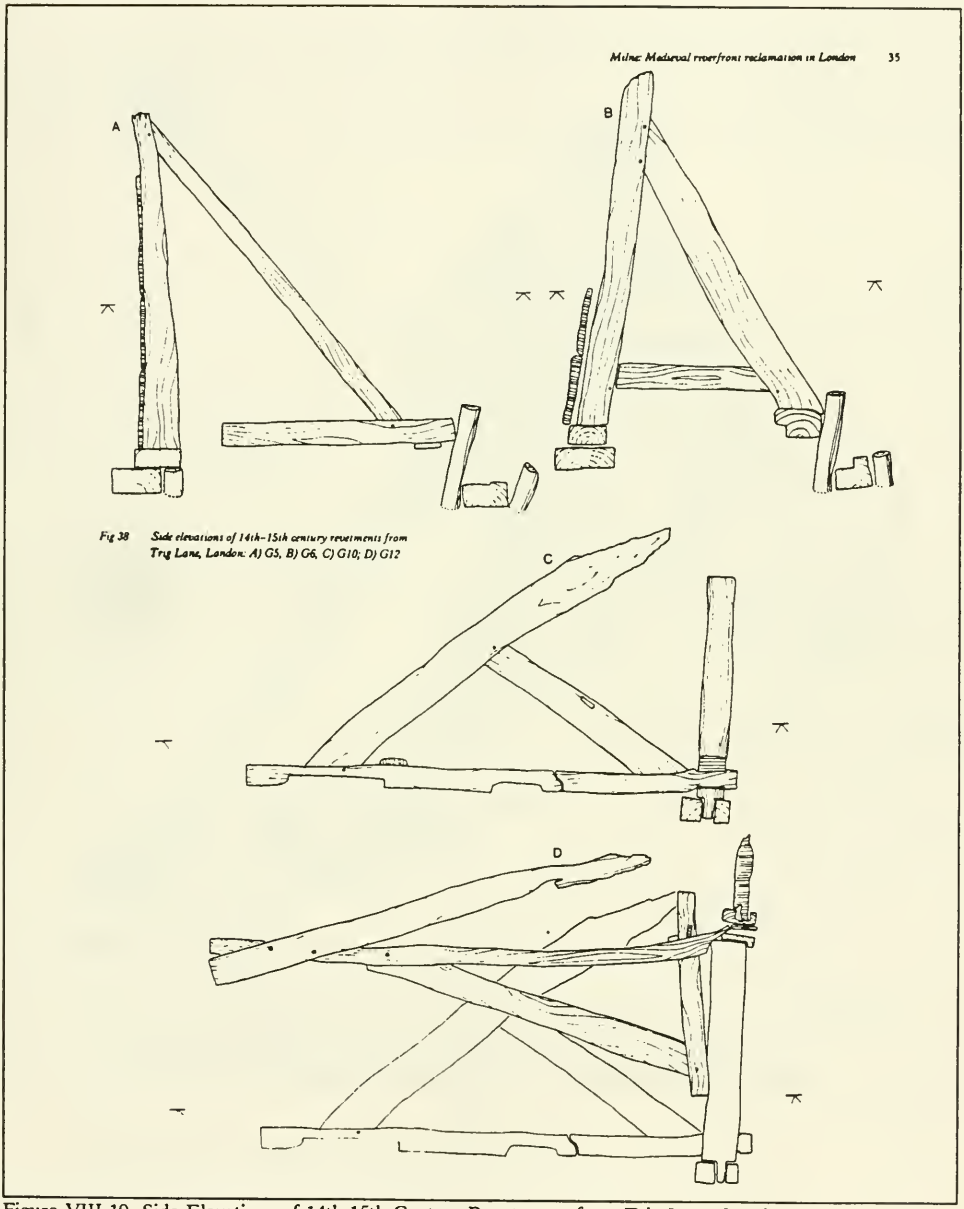
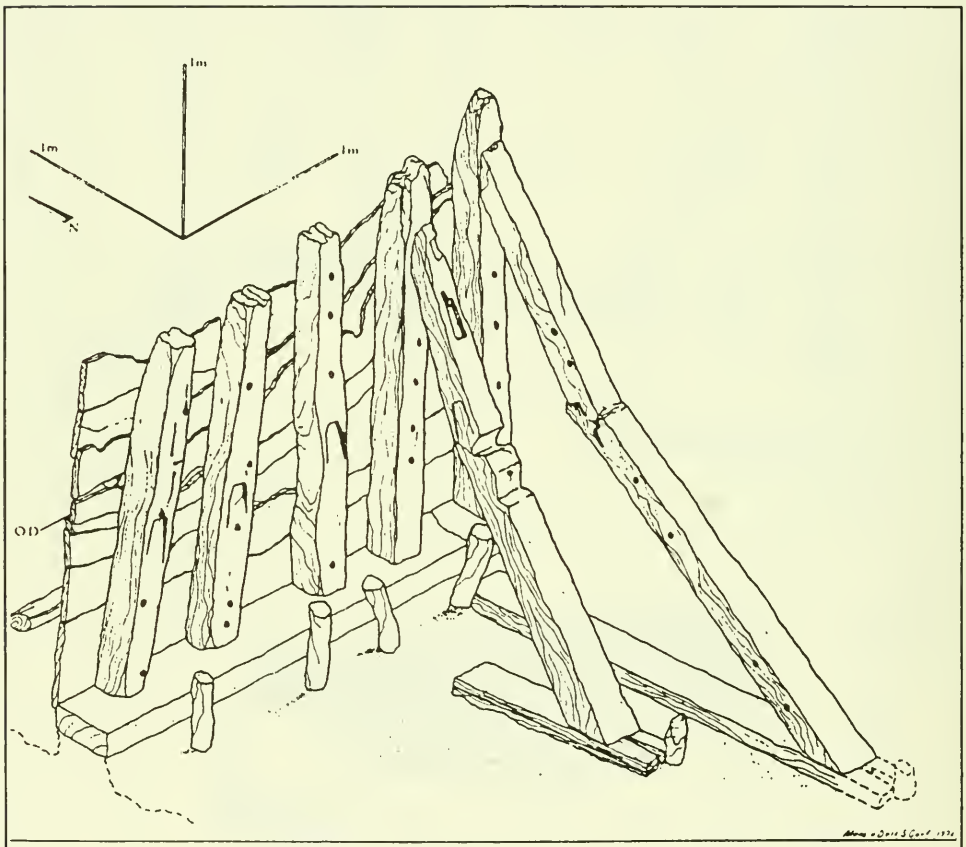


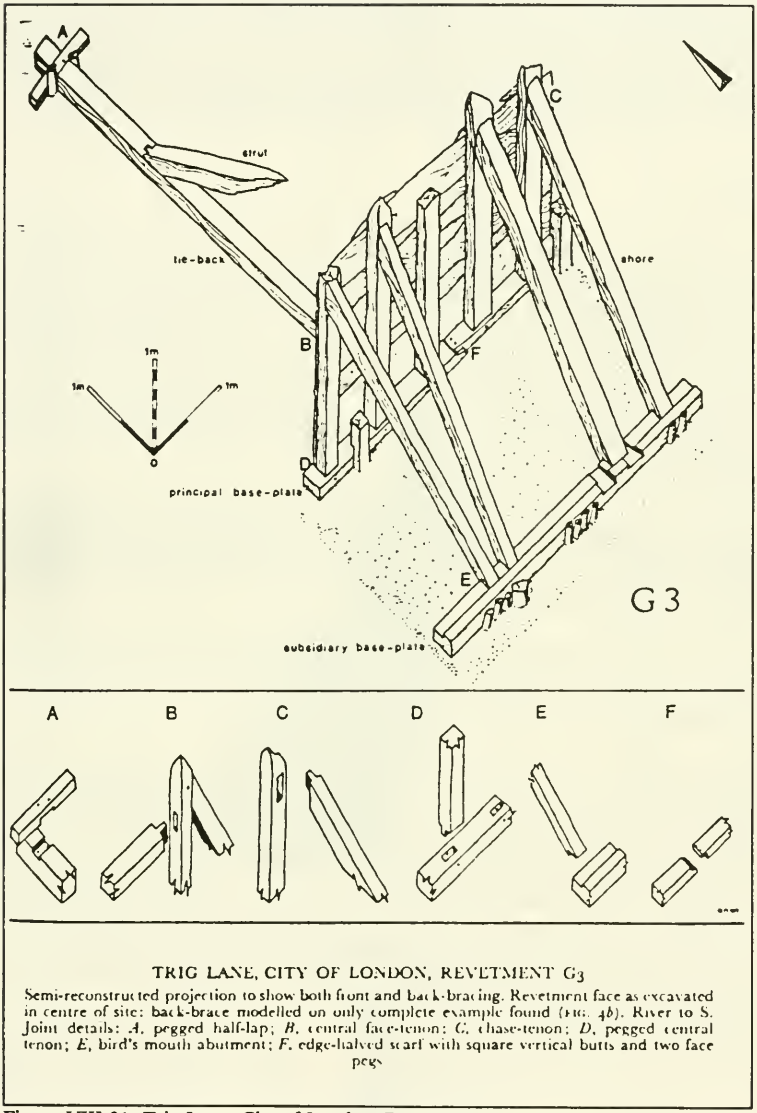
Fig 38 Side elevations of 14th–15th century revetments from Trig Lane, London: A) G5, B) G6, C) G10; D) G12

Figure VIII-19 Side Elevations of 14th-15th Century Revetments from Trig Lane, London



Isometric diagram of 'waterfront' III at Seal House, London. This medieval revetment is slightly older than the revetment excavated at Chapel Lane, Hull (see 128 below)

Figure VIII-20 Isometric Diagram of "Waterfront" III at Seal House, London



TRIG LANE, CITY OF LONDON, REVETMENT G3

Semi-reconstructed projection to show both front and back-bracing. Revetment face as excavated in centre of site: back-brace modelled on only complete example found (FIG. 4*b*). River to S. Joint details: *A*, pegged half-lap; *B*, central face-tenon; *C*, chase-tenon; *D*, pegged central tenon; *E*, bird's mouth abutment; *F*, edge-halved scarf with square vertical butts and two face pegs

Figure VIII-21 Trig Lane, City of London, Revetment

Other sources of data however, allow us to locate the shoreline with a large margin of confidence. The combination of a peat zone and the termination of the wharves across the site provides circumstantial evidence of the shoreline's position. The peat results from the decay of intertidal floral material which grows along shorelines in this region, while the shoreward end of wharfing identifies the beginnings of the wharfing at the shoreline. Using these data Figure VIII-22 locates mean high water of the shoreline on the site.

C. Early Well

At a point far along in the construction process, excavation of the lower parking levels was still taking place. During this excavation, a hollow wooden pipe was noted. This pipe was similar to the early wooden water pipes of Boston as seen on many occasions. However, there was a marked difference with this particular pipe: it was inserted vertically into the blue clay base. Surrounding the upper end of the pipe was a platform of flat shistlike stones. No other stones were in evidence or had been noted by the construction crew in the area. Construction crew and Beacon personnel remained on the alert for additional pipes in the area since it appeared that the lower end of the uncovered pipe had been inserted into another section yet undiscovered.

The schist platform was at approximately 25 ft. below street level or 15 ft. below the fill layer, well within the depths common for early dug wells. The soil matrix surrounding the schist base and the top of the pipe was a dense blue clay. No artifacts or other remains were associated with the platform.

Figure VIII-23 illustrates the first section of pipe. Significant to the understanding of how this pipe was used are the tapered lower end of the pipe and the funneled upper end and associated rust resulting from iron reinforcing.

No other pipe sections were discovered despite the vigilance of Timelines and Beacon construction personnel. Our analysis of this discovery leads us to the following conclusions. It appears that a well dating to the seventeenth or eighteenth century was constructed at this location. However, since the well was excavated into a solid matrix of clay (not water-bearing) to a considerable depth (reaching the limits of well depths of this period) with presumably no water encountered, the excavators attempted to make the well deeper by using the water pipe as an extension of the excavation. If no water was encountered using this approach, the location may have been abandoned without lining the walls with stone as was the usual case after a well was dug. Thus we believe that this feature is an abandoned non-productive well.

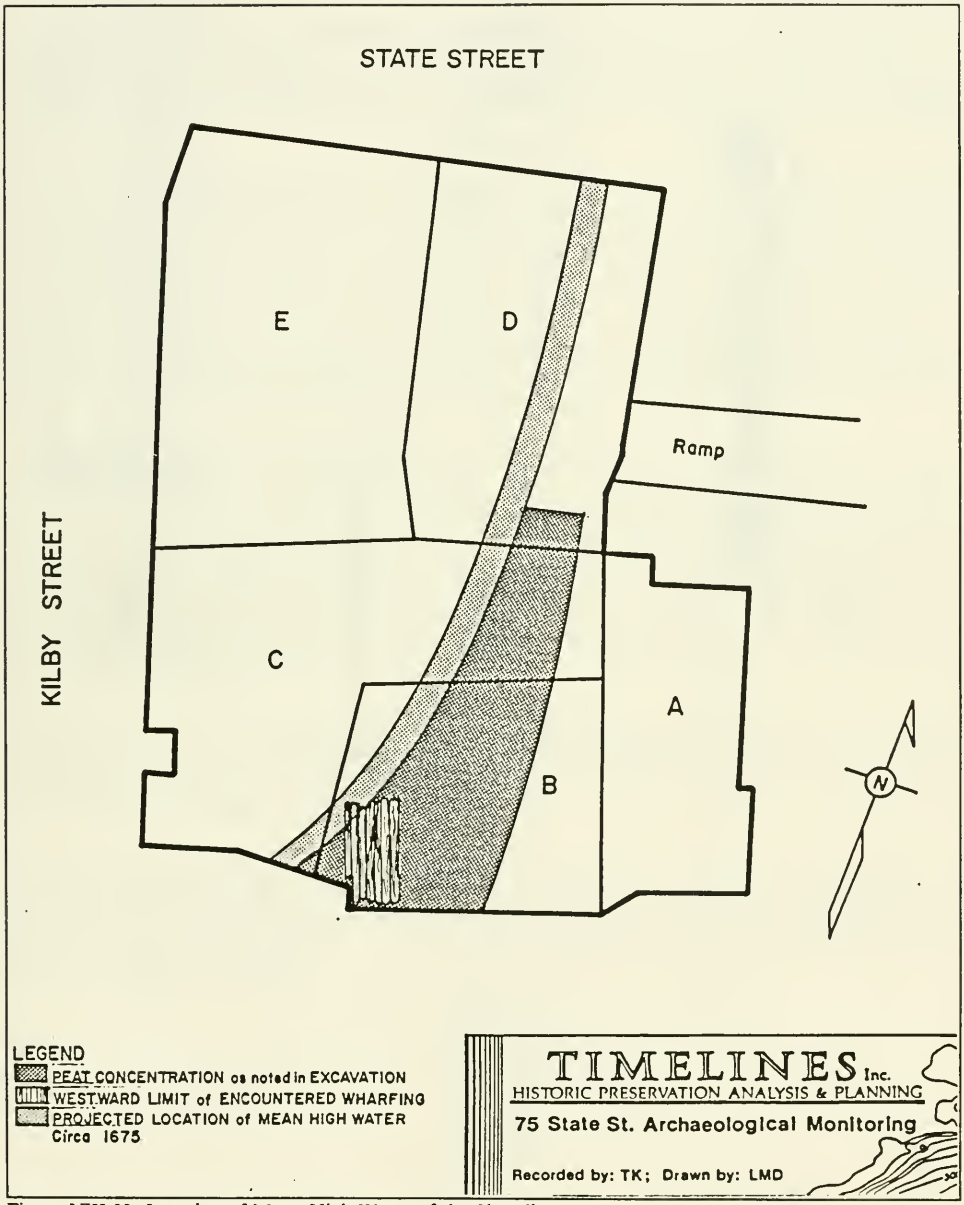


Figure VIII-22 Location of Mean High Water of the Shoreline

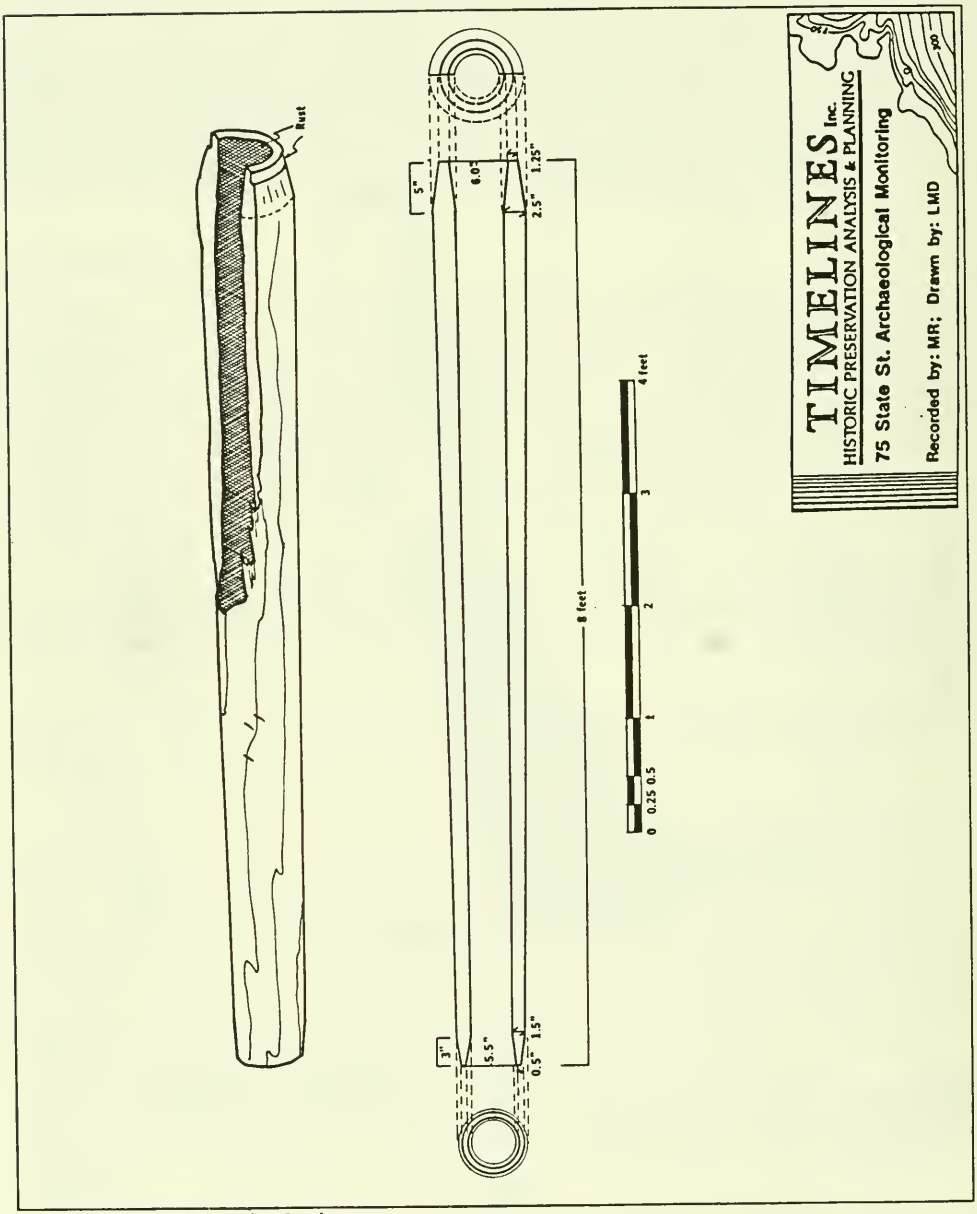


Figure VIII-23 Wooden Pipe Section

IX ANALYSIS OF TESTING AND MONITORING PROGRAM

The testing and monitoring program met several goals. First it provided inputs to the several compliance documents required under the environmental review process. It provided the Beacon Companies with research material to be used in several marketing programs, and it documented significant elements of Boston's past natural and cultural environment.

The testing and monitoring program also contributed to our understanding of Early Colonial Boston in several ways (see below), as well as demonstrating that resources may be valuable even though they have been truncated by later construction activities. While much of the upper sections of the early wharfing was destroyed by nineteenth-century development, sufficient material remained to allow for its recovery and study. Examination of these elements was enhanced by the quantity of material, which was sufficient to allow comparison of the 75 State Street wharfing with many similar structures in both the United States and Europe. As noted in other sections of this report, data become significant for comparative purposes when a sufficient quantity is available in a recoverable form.

Study of the wharfing data illustrates the conservatism of the builders in that they used techniques common in the Medieval Period. At the same time, they took advantage of the availability of massive wood pieces in the repair or renovation of the facilities, a practice made necessary by changes in the technology of shipping--specifically, larger ships. This implies that the builders responded to changing maritime technology rather than to environmental, cultural or other factors. Three out of the 15 timbers submitted for tree-ring analysis had a large number of rings, which translates into the introduction of comparatively massive timbers into the structures over a 25-year period (1730-1755) late in the life of the dockside.

Our confirmation of the exact location of the Colonial shoreline will assist others in making accurate predictions of its location at other sites. The variation between the seventeenth-century map location and the actual location was minimal, bolstering the conclusion that these sources are reliable.

The vertical water pipe at the bottom of the well remains a mystery. There is no reason to doubt our original hypothesis that it represents an attempt to reach water through the blue clay that failed and was abandoned. No new information has been encountered either to refute or support it. Until another example of a similar object is encountered, we can only hold to our original analysis.

X SUPPLEMENTAL RESEARCH

Throughout the project, Timelines, Inc. performed supplementary research in support of various marketing activities of the developer. This research resulted in:

1) An account of the results of the historic research for the general reader. This document became the basis for establishing the image of the building and its place as "The Cradle of Corporate America." The material was also used to guide the preparation of a full-page advertisement in the "Boston Globe" for the property.

2) A chart of the business history of the block with numerous graphics which were used in the design of the marketing center for the building.

3) A detailed history of Oliver's Dock, a feature of the site from which the tree ring dates were taken. This detailed history, exhaustively researched by Sheila Charles, was then converted into narrative form for the general reader to be used by the developer as a part of the marketing program for the building.

A. Narrative Site History - by Georgess McHargue

Fish, Fires, and Wharfing:

The Story of the 75 State Street Block in Downtown Boston

Introduction

Development of the 75 State Street Project represents a new beginning for this commercial block, located at the gateway to Boston's Financial District. In historical terms, the construction of an important new commercial building at this location is especially appropriate, since this particular piece of ground has been at the core of Boston's business activity from the city's beginning. The following glimpse of the area's past focuses on the 75 State Street Block's illustrious commercial heritage.

It is April, 1630

Today, two-thirds of the 75 State Street Block lies under the clean, sheltered waters of Boston Harbor. To the north on the Mystic River, and south on the Neponset are several large American Indian villages, but the local populations have been drastically reduced by European-introduced disease. Now this ground is only a hunting territory, cut by a single foot trail. What rises above the tide marks is part of a narrow peninsula joined to the mainland on the south and featuring a three-humped hill that will be known as the Trimountain until its only surviving portion is renamed Beacon Hill. On the flat plain between the Trimountain and the sea is little but windswept grass and a few shrubs.

The peninsula, called Shawmut by its American Indian inhabitants, separates the Charles River estuary from Boston Harbor. Buried beneath the mud on the peninsula's west side,

in an area that will be called the Back Bay, lie the remains of the so-called Boylston Street Fish Weir, an impressive structure of wattle and stakes that has been called the earliest environment-modifying facility in North America. It was built about 4,500 years ago by peoples who evidently appreciated the area's rich natural resources, not only of fish but of shellfish and wildfowl. The Fish Weir's remains will be discovered during the construction of Boston's subway system, demonstrating that the peninsula has been the site of intense activity, at least once in prehistory. It soon will be again.

Over in England, the ships are loading, the people are saying their farewells. Before the year is out, John Winthrop and his band of Puritans will have crossed the Atlantic and settled (after stops at Salem and Charlestown) on the east side of the peninsula. In only four years a publicist, recruiting settlers for this new town of Boston, will describe the place as "very pleasant...being a necke and bare of wood," so that it is free of "the three great annoyances of Woolves, Rattle-snakes, and Musketoes."

It is 1648

There are 315 houses in Boston, scattered along the eastern or harbor side of the Shawmut Peninsula. Already the land has changed. Though still mostly water, the north side of the 75 State Street Block is now bounded by a wide thoroughfare leading from the water to the Town House, Boston's commercial and governmental center, forerunner of the modern-day Old State HOuse. This way will be called variously Broad Street, Great Street, Townhouse Street, and King Street before settling down after the Revolution as State Street.

At water's edge, the property has been enlarged somewhat by the construction of a substantial wharf, one of a series that stretches northward to Town Cove, site of the Town Dock (modern Dock Square). The wharves accommodate a growing commerce that includes a version of the famous "triangular trade," with principal destinations in England, the Caribbean, and the Iberian peninsula. The little colony is less than two decades old, but there are clear signs that its future will be commercial rather than agricultural. Even the stoniness of the soil encourages citizens to look for their livelihood to the sea, where Boston enjoys a significant natural advantage. In the slow, broad-bottomed ships of the day, the voyage from England to Boston is several days shorter than that to New York or Virginia.

Original ownership of the property on which the 75 State Street Block's first wharf was built is in doubt, but it was probably granted to Elder Thomas Leverett, one of the first settlers, as it will certainly be in the hands of his son Thomas (a future Governor of the Colony) by 1660. To the south of the 75 State Street Block, a marshy stream flows into the bay, forming Shelter Cove, and work has begun on the task of digging it out to provide for still more wharfing. At this time, five or six buildings stand on the Block, both dwelling houses and outbuildings. An important property holder on the 75 State Street Block is Valentine Hill, one of the town's dozen or so leading merchants, with special connections to the fish and fur trades. Another is Governor John Winthrop. Both men are principals in the project of digging out the cove, but neither lives on the Block. Already, the town's gentry have begun to seek out the higher ground, leaving the waterfront to its commercial destiny.

The houses on the 75 State Street Block are like those in the rest of Boston, steep-gabled frame buildings sided with weather-boarding or clapboards, each set in its own garden or orchard. As early as 1631, thatch was forbidden as having caused a destructive fire. The houses have a look of England's Essex County, from which many of their builders originated.

It is 1676

Properties on the 75 State Street Block, have divided and changed hands many times through purchase and bequest. The wharves are now three: Leverett's, Mann's, and Marshall's. All the south side of the Block, adjoining Shelter Creek, has been bought by Peter Oliver and built up into a complex of warehouses and shipping facilities known as Oliver's Dock. The Block is only about three-fifths water now.

Shipbuilding is a major industry and shipwrights are listed among the 75 State Street Block's property holders at various times. Most of the vessels loading and offloading or constructed at the wharves on the Block would be among the reported 430 ships of 30 to 250 tons' burden that are operating out of Boston at this period. A contemporary records, "It is the great care of the merchants to keep their ships in constant employ...and Boston may be esteemed the mart town of the...Indies." The so-called Wine Islands--Madeira, the Canaries, and the Azores--also figure largely in Boston's trade network. Leading imports from these sources and the Iberian mainland include Bilbao iron and pieces of eight, Valencia oranges, Malaga grapes, Cadiz salt, and of course canary and madeira wines.

At least some of the ships tying up at wharves on the 75 State Street Block will be privateers preying on Dutch and French shipping. Privateering and its companion activity, smuggling, are thriving in spite of their quasi-illegal status. Boston's merchants have a keen eye for profits and a penchant for ignoring Britain's loosely enforced regulations that prohibit her colonies from trading in manufactured goods or with "enemy" nations.

In another part of the 75 State Street Block, William Ingram has erected (or by 1680 will erect) a famous tavern called the Bunch of Grapes on or adjoining the northwest corner of the Block. (The probability is that its exact location now lies beneath Kilby Street.) After less than fifty years, Boston has a distinctive character of its own: it looks to the sea and waterside properties are increasingly devoted to trade, to the dwellings and shops of artisans, and of course to the more mundane needs of merchants, townspeople, and thirsty sailors, as embodied in the Bunch of Grapes.

Behind the 75 State Street Block on the west side, Mackerel Lane (not yet called Kilby Street) now leads to a bridge over Shelter Creek (in the vicinity of modern Water Street). The name Mackerel Lane suggests the presence in the neighborhood of fish dealers, packers, and processors. In imagination we may add the smell, no doubt becoming a stench in summer, of their wares to the pervasive scent of salt marsh from the direction of Shelter Creek and the tang of ale, cheese, or beef from the tavern.

On arriving at Boston in 1663, traveler John Josselyn wrote: "The houses are for the most part raised on the Sea-banks and wharfed out with great industry and cost, many of them standing upon piles, close together on each side of the streets as in London...their materials are Brick, Stone, Lime, handsomely contrived, with three meeting Houses or Churches and a Town-house built upon pillars where the merchants may confer, in Chambers above they keep their monethly Courts."

With this the pattern is set; in its essentials, it will not change in the next 200 years. For the Town House is the seat of government. Between it and the waterfront is the heart of commercial Boston, a few short blocks of State Street along which lie the town's first outdoor market, where Boston's original "bean and cod" are hawked along with every other form of produce and commodity; also the First Meeting House and, as time goes on, the homes of some of the town's most prosperous merchants. The original Town-house is a many-gabled timber structure with an open colonnade at street level. It would look quite at home on any picture-postcard from a tourist town in southern England, but modern visitors will have to cross the Atlantic to see its like. It will burn in 1711. Meanwhile, the pace of Boston's development is increasing.

It is 1722

The face of the 75 State Street Block has changed radically, and with it the face of Boston, which now has about 3,000 houses, still concentrated on the eastern side of the peninsula.

In 1679, the whole district from Mill Creek through Dock Square and south to Oliver's Dock is destroyed by fire. John Marshall, owner of Marshall's Wharf, receives ten pounds from the town in compensation for gunpowder he donated to firefighting efforts.

Boston is now a city, in that it has distinct residential and commercial neighborhoods. By the 1740s, it will be the largest in British North America. Where once King Street ended at the waterside by the base of Leverett's Wharf, (two-thirds of the way along the 75 State Street Block's northern edge) there has now been constructed a fine new wharf, 54 ft. wide and extending nearly 800 ft. into the harbor.

Begun in 1710 by a group of entrepreneurs that included Daniel Oliver of the Oliver's Dock family, this appropriately-named Long Wharf immediately establishes the properties along King Street as preeminent among Boston's pieces of commercial real estate. More, the Long Wharf makes Boston the most important port in North America. Even before its construction, in 1698, Lord Bellomont had given it as his opinion that there were "more good vessels belonging to the town of Boston than to all Scotland and Ireland, unless one should recon with small craft, such as herring boats." During the period 1695 to 1714, records show the 99% of all vessels built in New England come from Boston (including Charlestown). In terms of port clearances, too, Boston surpasses New York, Philadelphia, and the southern colonies by ratios of two or three to one.

Much of the filling for Long Wharf is done with the debris from a disastrous fire that sweeps the town in 1711, but stops just north of the 75 State Street Block. It comes so close, in fact, that it destroys the house occupied by Francis and Rebecca Holmes, then the proprietors of the Bunch of Grapes. Perhaps the house was on the other side of King Street, which acted as a sort of firebreak.

On the parcel next east from the Bunch of Grapes, James Gibson, a (presumably retired) mariner, has for some years run another tavern, called the Marlborough Arms. The colony is still very much a part of England, and the recent military victories of the Duke of Marlborough at faraway places like Blenheim and Ramillies make him as much a hero here as in London. This year, Gibson will sell the half of his property not containing the tavern to glazier William Peck.

After 1713, with the signing of the Peace of Utrecht in Europe, Boston's trade broadens out even further to include the coasts of South an Central American and the French West Indies. The first known marine insurance is written in Boston at about this time, and in 1720 wealthy English merchant Thomas Amory announces that he has chosen to settle in Boston because he finds its commercial life more active than that of London, Lisbon, Amsterdam, Charleston, Philadelphia, or New York.

The land once held by Governor Leverett, abutting and ow actually part of Long Wharf, passes to the family of his son-in-law, Elisha Cooke, Sr., a doctor, lawyer, and statesman. In the bequests of Dr. Cooke, we learn for the first time that the property contains "brick tenements," a sign of Boston's continuing urbanization. In the political struggles of the times, the Cooke and Oliver families will both play leading roles, although on opposite sides.

Cooke and his supporters were actually the proponents (though unsuccessful) of Boston's first private banking scheme, called the Fund. Among their principal opponents were the Governor and Andrew Oliver. The feuds and factions of this time will later develop into the full-blown dissensions between Patriots and Tories.

On the 75 State Street Block, abutting the Cooke family's property, are the ;house, cooper's shop, tidal flats, and three warehouses occupied by merchant Andrew Faneuil, a recently-arrived French Huguenot immigrant. When he dies Andrew Faneuil will leave his fortune to his nephew Peter, who will build on it so successfully that he will be accounted the richest man in Boston and leave a permanent mark on the face of the city.

The 75 State Street Block is almost entirely built out now by the process of wharfing, silting, filling and wharfing again. The only water on the property lies off a section of Marshall's Wharf on the east and in a portion of Oliver's Dock along the Block's southern edge. Poole's Wharf, twice its original width, now extends well beyond the property's limits, as do other wharves adjoining Long Wharf. At this moment, the property is, and will remain for some time, a bustling waterfront with taverns, warehouses, wharves, houses, gardens, and yards for drying clothes.

It is 1760

In 1742, Peter Faneuil, nephew of 75 State Street Block property-holder Andrew, is memorialized in Boston's records for his gift to the city of Faneuil Hall, described as "erected [at] a very great expense...a noble structure...not only a large and sufficient accommodation for a market place, but a spacious and most beautiful town hall over it." The building still stands today, somewhat to the north and west of the 75 State Street Block in the Quincy Market complex.

The Faneuil fortune is being built on a practice not atypical of Boston's commercial community at the time: trading with both sides in the French and Indian Wars. On the one hand, provisions and naval stores are legitimately supplied to the British. On the other is a brisk illegal exchange with the French.

In this year of 1760- a great fire, the worst in Boston's history, destroys almost all of the buildings on the 75 State Street Block, including everything on Mackerel Lane and all the wharves. The only exceptions are a few stores that front on the south side of King Street. In the rebuilding that follows, Mackerel Lane is widened to 40 ft. and renamed Kilby Street in honor of Bostonian Christopher Kilby's contribution of one hundred pounds for relief of the fire's victims.

This widening takes with it the Bunch of Grapes, which is probably rebuilt somewhat to the west, perhaps on the west corner of Kilby and King Streets. By the date of the fire, the number of taverns on the 75 State Street Block has increased to three, and in the lists of properties destroyed, the premises of shipwrights and coopers are prominent. The latter are makers of barrels and casks, and their preference for locations such as this is easily explained. Since the mother country considers that the Colonies exist in order to keep her supplied with raw materials and emphatically not to compete with her in the production of finished goods, a great deal of wheat is loaded for export from the Long Wharf and the wharves on the 75 State Street Block consists of commodities, such as salt fish, dried beef and pork, flour, dried peas, dried beans, butter, tar, and biscuit, that could most conveniently be packed in barrels. A large part of Europe is still Catholic, so there is a steady demand for Lenten and Friday fish, especially. Another important export is rum, made from Caribbean molasses.

It is 1789

After the great fire of 1760, there are many property transfers on the 75 State Street Block. The Peck family sells its holdings to Nathaniel Wheatley in 1771. Wheatley's parents had been the purchasers, in 1761, of a small, thin, and sickly female slave. Bought for "a trifling sum," this child would grow to be Phillis Wheatley, that prodigy of poetry and learning who so astonished the drawing rooms of London when she traveled there with Nathaniel, but who died in poverty and obscurity, her former celebrity quickly and cruelly forgotten.

The rebuilt Bunch of Grapes continues to be a center of civic and community activity. Paul Revere's lodge of Masons holds its regular meetings there.

On the night of the first public reading of the Declaration of Independence, from the balcony of the Old State House., it is on King Street outside the Bunch of Grapes that the uproarious crown builds a bonfire on which to burn every emblem of the British Crown that can be found, including the original Lion and Unicorn from the State House gables. That is probably one of the last times that King Street is so called; Patriot sentiment quickly converts it to State Street, the name by which we know it today.

Boston no longer enjoys absolute preeminence in matters of maritime commerce. As early at the 1770s New York and Philadelphia are nearly even with her in terms of ship clearances; their populations exceed hers by the end of the war.

It is not really very much time since Winthrop's little fleet landed on the peninsula called Shawmut. For these years, on this spot, perhaps the best epigraph is one written this year by Frenchman Brissot de Warville. Of the Bostonians he says, "Commerce occupies all their thought, turns all their heads, and absorbs all their speculations." However, he continues, "Let us not blame the Bostonians; they think of the useful before procuring the agreeable. They have no brilliant monuments; but they have neat and commodious houses, superb bridges, and excellent ships." Then, as now, the 75 State Street Block was at the commercial core of Boston.

B. Business History of the Site

Figures X-1 and X-2, compiled by Sheila Charles, give a time line of State Street dates and document the establishment of businesses on and near the 75 State Street Project.

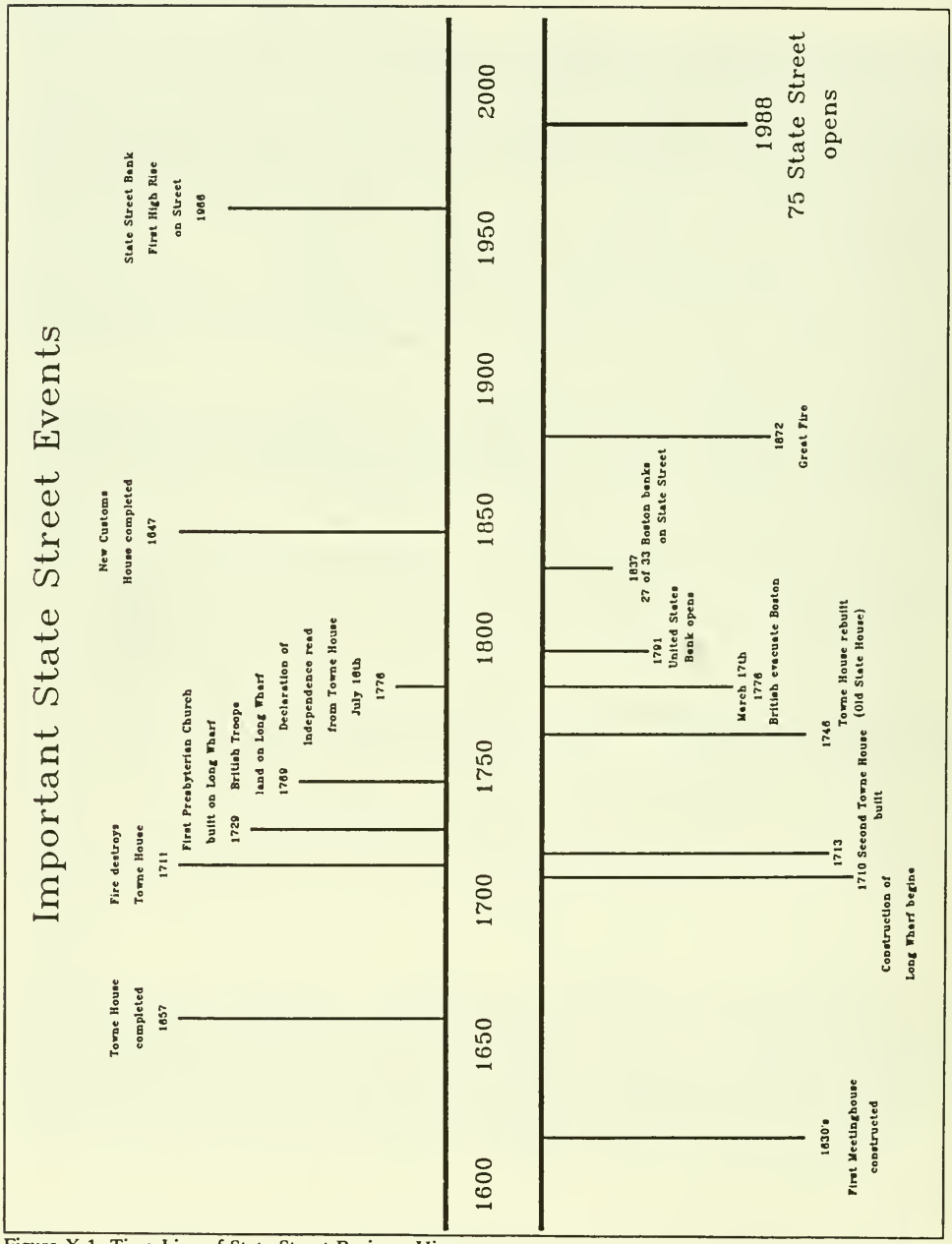


Figure X-1 Time Line of State Street Business History

BUSINESSES WHICH STARTED ON STATE STREET[1]

ADDRESS	NAME OF BUSINESS	OCCUPATION
11 State Street	Jordan, Lovett & Company[2] (1870)	Insurance
15 State Street	Mutual Benefit Life Insurance Company[2] (Boston Agency) (1847) Estabrook & Co. (1930d)	Insurance
17 State Street	James T. Phelps & Company (1854)	Life Insurance
22 State Street	Joseph W. Coburn (1871) Joseph W. Coburn & Co. W. A. & H. A. Root	Building Construction
27 State Street	Whitcomb Porter & Co. (1849)	Insurance Agents
	John R. Lee (1877) Lee & Company R. O. Lee & Co.	Mortgages
	Foster & Cole (1868) Foster & Scull Scull & Bradley Scull & Field Field & Cowles	Insurance
	Frank G. Barnes (1967) Appleton & Barnes George C. Appleton George C. Appleton & Son	Real Estate & Mortgages
28 State Street	Royal Exchange Tavern	
	Morse Loomis & Lane (1878) Loomis & Lane Elihu G. Loomis	Lawyers
	Blake Brothers & Co. (1858)	Stock & Note Brokers
	J. Ingersoll Bowditch (1864) Charles P. & Alfred Bowditch Ingersoll Bowditch	Trustee

[1]Addresses are date of founding or directory or source and numbering on street changed.

[2]Still in existence in Boston area.

Figure X-2 Businesses Which Started on State Street

ADDRESS	NAME OF BUSINESS	OCCUPATION
30 State Street	Mutual Benefit Insurance Company (1930d)	
40 State Street	Royal Custom House State Street Trust Company (1916d) Union Bank (1972)[3]	
	Kidder Peabody & Company[2] (1865)	Bankers
	Brewster Sweet & Company (1851) Brewster Bassett & Co. Cobb & Estabrook Estabrook & Company Moseley Hall Garten Estabrook & Weeden, Inc. (1986 - 60 State Street)[4]	Investments
	Ropes & Gray (1865)[2] Ropes Gray & Loring Ropes Gray & Gorham Ropes Gray Boyden & Perkins	Lawyers
41 State Street	John Hancock Mutual Life Ins. Co.[2] (1862)	
47 State Street	Lee Higgenson (1848) Lee Higgenson & Co.	Bankers & Investment Securities
50 State Street	Isaac & Stephen Jenney (1812) Stephen Jenney & Co. Jenney Manufacturing Company[2]	Petroleum Products
	William Whiting (1838) Whiting & Russell Russell & Putnam Putnam & Russell Putnam Russell & Bell Putnam Bell Dutch & Santry Putnam Bell & Russell (1986 - 131 State Street)[4]	Lawyers
53 State Street	Boston Stock Exchange (1834)[2]	
	R. L. Day (1865) R. L. Day & Cobb R. L. Day & Co. Anthony Tucker & R. L. Day[2] (1986)	Investment Securities, Bonds

[3]Illustration exists.

[4]Still on State Street.

Figure X-2 (Cont.) Businesses Which Started on State Street

ADDRESSES	NAME OF BUSINESS	OCCUPATION
56 State Street	Francis E. Bacon *1868) F. E. Bacon & Co. J. M. Pendergast & Co.	Cotton Goods Mfg.
60 State Street	Amos Cotting (1836) Charles U. Cotting Charles E. Cotting George L. & A. N. Deblois	Brokers
	Putnam Bell Dutch & Santry (1930d)	
	R. O. Lee & Co. (1930d)	
	Hale & Dorr (fndd?)(1986)	Lawyers
65 State Street	Boston Manufacturers Mutual Fire Ins. (1850)	
66 State Street	British Coffee House[3]	
	?Massachusetts Bank (1870)	
67 State Street	?Massachusetts Bank (1784) Safety Fund Bank Massachusetts National Bank First National Bank of Boston (1930d - 50 State Street)[2]	
68 State Street	P. E. Eddy (1859) Jordan Eddy & Co. Kingsley, Eddy & Hastings P. E. Eddy & Son John H. Eddy & Co.	Insurance
70 State Street	J. B. Moors & Co. Moors & Cabot, Inc. (1986)	Bankers, Stock-brokers[2]
75 State Street	Fuller's Tavern (1803)	
	Fireman's Insurance Company (?)[3] (or 77-79?)	
	Atlantic National Bank (1828)[3] Atlantic National 4th Atlantic National Commonwealth Atlantic National Atlantic National Bank of Boston Travelers Insurance	

Figure X-2 (Cont.) Businesses Which Started on State Street

ADDRESS	NAME OF BUSINESS	OCCUPATION
76 State Street	S. C. Thwing & Co.[3]	
79 State Street	Farley's Foreign Express (John Farley & Sons) ca. 1860[3]	
	Lewis & Hall[3]	
	E. B. Townsend[3]	
81 State Street	Boston Cooperative Association[3]	
	Segar Manufacturers[3]	
82 State Street	Thomas Groom (1833)[3] Thomas Groom & Co.	Stationary Mfg.
83 State Street	Western Union Telegraph Co.[3]	
84 State Street	Elihu G. Loomis (1930d)	
85 State Street	Mutual Insurance Co. of New York[2] (Mony Financial Services)	
91 State Street	Traders Bank Building (1860A)	
99 State Street	The Boston Ice Company (1866)[2]	
101 State Street	Parks Wright & Co. (1831) Wright & Whitman J. S. & Eben. Wright Co. Wright Bliss & Fabyan Bliss Fabyan & Co. Inc.	Cotton Goods Commission Merchants
105 State Street	American Tube Works (1851)	
114 State Street	Richards Building	
125 State Street	Samuel Thaxter (?)[3]	Instrument Maker
134 State Street	Daniel Palmer Palmer & Chester Walstein R. Chester & Co.	Wholesale Lumber

Figure X-2 (Cont.) Businesses Which Started on State Street

ADDRESS	NAME OF BUSINESS	OCCUPATION
230 State Street	Robert Miller & Co. (1847)	Awnings
No Address	John G. Tappen (1906) Henry Edwards Edwards and Stoddard Stoddard, Lovering & Co. Stoddard, Haserick, Richards & Co. Richards, Atkins & Haserick Atkinson, Haserick & Co.	Machinery & Cotton Dealers
	Atlantic Mutual Insurance Company (established in Boston 1856) The Atlantic Companies 1986)(C+)[2]	
	Boston Marine Insurance Company[3] (1873)? 1849 Currier pic shows? Boston Insurance Company	
No Address	Calumet & Hecia Mining Co. (1866) Calumet & Hecia Calumet & Hecia Consolidated Copper Company	
	Warren Bank (1836) State Street corner Merchants Row Shawmut Bank Shawmut National Bank National Shawmut Bank of Boston Shawmut Bank of Boston	
	New England Mutual LIfe Insurance Co. (1843) Oldest chartered mutual insurance company in America New England Life[2]	
	Briggs & Wheeler (1842) Briggs & Robinson John Briggs & Co. Briggs-Mahoney Inc. (Originally on State Street block) Briggs-Mahoney Inc. (A division of Carpenter- Morton Co.)[2]	Paint varnish & putty mfg.
	Hale & Dorr	

Figure X-2 (Cont.) Businesses Which Started on State Street

C. Narrative History of Oliver's Dock for the General Reader - by Georgess McHargue

"A Piece of the Dock"

Historic Timbers from 75 State Street

The timbers, when they came out of the hole, were muddy and ragged looking, but amazingly solid after their centuries in the ground. As the heavy machinery lifted them out, archaeologists Elena Decima and Tim Kennedy monitored the operation. The timbers were almost exactly where previous research had predicted they would be: about fifteen ft. down on the eastern side of the 75 State Street Block. They were the remains of Oliver's Dock, a major feature of Boston's commercial waterfront during the period when the port of Boston was the busiest in North America.

*

From Salt Marsh to Salting House

Oliver's Dock first appears on a map in 1676. Then, and throughout its century-long history, it was associated with members of one family, the Olivers, who went from Puritan respectability to wealth, notoriety, and ultimate self-exile in three generations.

The first Oliver to reach Massachusetts was Thomas, a Bristol native who sailed to join Gov. John Winthrop's settlement on the Shawmut Peninsula (later Boston) in 1632. Thomas was definitely one of the "gentry." His profession was that of "chirurgeon" (surgeon), and he soon became prominent in the colony's affairs, serving as ruling Elder of the First Church, as town selectman, and in such other offices as "alotter" and "arbitrator." His house and lot were uphill from the waterfront in a desirable location near a good spring and "next north of" the residence of Gov. Winthrop.

The good spring near Elder Thomas Oliver's house ran down to a marshy inlet known as Shelter Cove. The south side of this inlet was originally town-owned marshland (a source of hay); the properties on the north side belonged to Thomas Leverett and Valentine Hill. In 1643, Boston's selectmen agreed to a proposal put forth by five individuals, including Gov. Winthrop, for "the Digging of a creeke for the harbor of boats in the marish." Perhaps sensing the commercial possibilities opened up by this improvement project, Peter Oliver, son of Elder Thomas, apparently bought up part of the nearby town marsh property. By 1649, he was contracting with the town to maintain a road to the new dock area, and this road shortly became known as Oliver's Dock Road. By 1664, he had succeeded in consolidating his holdings on the south portion of the 75 State Street Block and the area

around what is now Liberty Square. The property would be called Oliver's Dock until after the Revolution, when the process of filling and wharfing had carried the shoreline well to the eastward.

The earliest commercial activity recorded for the vicinity of the dock was salting. Salt was an essential, but scarce, commodity in the early colonies. Its principal use was as a preservative, without which the tons of fish brought in from Massachusetts Bay and neighboring waters could not be shipped to the mother country. A salt house for the evaporation of sea water was constructed on the Oliver's Dock site as early as the 1660s.

The Dockside

Though modern usage has sometimes treated the words as if they were synonymous, earlier centuries made a distinction between a dock and a wharf, and this distinction is clearly illustrated in maps of the period. A wharf, such as Marshall's, Mann's and Leverett's wharfs and ultimately the famous Long Wharf (portions of all of which form part of the 75 State Street Block, see map) was a structure built out from the shore; a dock was a natural or manmade cove or inlet in which ships could be berthed, often settling into the ooze at low tide. The edges or shores of the dock were frequently defined by pilings. The land areas adjoining the dock (the dockyard) housed warehouses, retail shops, residences, wharves, shipping-related industries, and (of course) places of refreshment for mariners, merchants, and local residents. Thus Clough's map of Boston in 1676 shows the Blue Bell Tavern on the Dock site in addition to several other structures.

Peter Oliver himself owned a warehouse there until his death in 1670, when it and the Dock property probably passed to his son Peter (II). Born in 1655 and a graduate of Harvard College, the second Peter Oliver appears to have been a merchant like his father.

The year 1679 saw drastic changes to the Dock area. A contemporary document relates: "About midnight began a fyre in an alehouse, which by sunrise consumed the body of the trading part of the Towne; from Mill-creek to Mr. Oliver's dock, not one house nor warehouse [was] left."

Following the 1679 fire, the whole dock area was rebuilt with an even greater density of residential, craft, and commercial development. A second fire ravaged the city of Boston in 1711, but did not damage the property, which suffered an even narrower escape in 1724, when a third fire reached as far as a large warehouse in the Dock area but was prevented from advancing further by the creation of fire brake.

In one sense, at least, and for a brief period, the activities of the bustling dockside appear to have included entertainment. An advertisement placed by one Nehemiah Partridge in 1714-15 invited the public to attend a showing of an "Indian mitchean or Moving Picture, wherein are to be seen windmills and watermills moving around ships sailing on the sea, etc., at his house in Water Street at the head of Oliver's Dock."

Merchant Princes

At about this period, ownership of the property seems to have passed to Andrew Oliver, nephew of Peter (II). The historical record is silent on the later years and death of the second Peter, but it is possible that he never married and some or all of his property passed to his nephew Andrew (1706-1774), the son of Peter's younger brother Daniel (1664-1732) and his wife Elizabeth Belcher, daughter of New England's largest shipowner and grain merchant and sister of one of the colony's governors. Like his brother Peter (II), Daniel was prominent in community affairs, serving as selectman, Overseer of the Poor, Justice of the Peace, a Commissioner for the New England Society for Propagating the Gospel among the Indians, and a member of the Governor's Council. Daniel was also a key member of the group of entrepreneurs that, in 1710, undertook the construction of the famous Long Wharf, which immediately established Boston as preeminent among the port cities of British North America, and which adjoined the 75 State Street Block at its northeast corner.

Following family tradition, Andrew Oliver was a merchant. He resided with his wife, Mary Fitch, and his parents in the family mansion on Oliver Street and made daily trips to his warehouse on the dockside. In Andrew Oliver and his brother Peter (III, 1713-1791), the Loyalists were to find two of their most prominent adherents in the upcoming confrontation between the Patriot faction and followers of the English King.

Andrew served on the Great and General Court (the state legislature) from 1742-46, on the Governor's Council from 1746 onwards, and on the Commission to settle the boundary dispute between New York and New Jersey in 1769. Ultimately, he rose even higher, becoming Secretary of the Province in 1756 and Lieutenant Governor in 1770. Andrew was not only powerful in his own right. As a family, the Olivers had come to loom very large in Provincial affairs.

Andrew's brother Peter (III), rivalled him in the brilliance of his career. Although reputed to be an outstanding scholar, Peter was disciplined before his graduation from Harvard (1730) for the theft of a turkey and a goose. This juvenile peccadillo notwithstanding, he became a Justice of the Superior Court in 1756, and Chief Justice in 1772. As an Associate Justice, he sat, in 1770, upon the trial of Capt. Preston and his soldiers who were accused of perpetrating the "Boston Massacre." Preston and six of his men were acquitted; two others were found guilty of manslaughter and discharged from the army. Even though John Adams was one of the attorneys for the defense, Judge Oliver's association with the acquittal did little to increase his popularity with those outside the ruling elite. It is said that Judge Oliver

...always made his journey to and from Boston with his coach and four, his coat of arms emblazoned on the panels of the doors, with attending outriders and postillion.

A Little Industrial Spying

Peter Oliver (III) was also a principal in what is said to have been one of Massachusetts' earliest incidents of industrial espionage. In the 1740s, Oliver determined to set up an iron-rolling and -slitting mill for the production of the iron rods used in nail making. The process was new, however, and its secrets were closely guarded. Having learned that there was a successful mill of this type operating in Milton (the only such in the area), Oliver dispatched a mechanically-minded young man named Hushai Thomas to bring back the desired information. Thomas disguised himself as an "idiotic person" and hung about the Milton premises for some weeks, until he was accepted as harmless. One day, when the usual guard was absent, he seized the opportunity to enter. The technical data he brought back to Peter Oliver made possible the establishment of a profitable competing operation beside the Nemasket River in Middleboro. Elsewhere on Oliver's 300-acre Middleboro estate stood his renowned country residence Oliver Hall, which became a social center for the wealthy and fashionable.

Dynasty

Andrew himself, following the death of his wife Mary in 1733, became the brother-in-law of future Governor Thomas Hutchinson by marrying Hutchinson's wife's sister, Mary Sanford. To cement the connection further, Andrew's nephew Peter (IV), son of Justice Peter Oliver (III), married Thomas Hutchinson's daughter Sarah. The result was termed by Patriot orator James Otis an "incestuous political dynasty."

Certainly, the Olivers made their royalist views evident. Perhaps as a reward for his unswerving loyalty, Andrew Oliver was commissioned Stamp Officer and charged with enforcement of the British Parliament's highly unpopular Stamp Act of 1765. The purpose of the act was to cause the "rebellious colonials" to pay part of the upkeep of the 10,000 British regular soldiers quartered in North America. The money-raising mechanism was the sale of stamps, without which no newspaper, almanac, or pamphlet could be published, and no legal document, diploma, or liquor license validated. Even a pack of playing cards required a stamp before it could be sold.

"Rituals of Detestation"

The reaction of the colonists was of a historic intensity. The riots that broke out were characterized by a modern commentator as "rituals of detestation." At dawn on August 4, 1765, Andrew Oliver was hanged in effigy from the "Liberty Tree," a giant elm that stood at the corner of Essex and Orange (later Washington) streets. The following verse was pinned to the image:

> Fair Freedoms glorious Cause I meanly quitted,
> Betrayed my Country for the Sake of Pelf,
> But ah! at length the Devil hath me outwitted,
> Instead of stamping others have hanged my Self.

On the right arm were the initials of the mock victim, and on the left was the even more dubiously constructed verse, "What greater Joy did ever New England see/ Than a Stampman hanging on a Tree."

The Sheriff attempted to cut down the effigy, but was prevented by a crowd of about 3,000. In jocular fashion, the crowd then accosted a number of farmers bringing their produce across Boston Neck and detained them until mock stamps had been affixed to their wares. Then the crowd, led by Ebenezer MacIntosh, a twenty-eight-year-old cordwainer and veteran of the Ticonderoga campaign, cut down the effigy and paraded it through the streets toward the Town House (the government seat that stood on the present site of the Old State House, at the head of what was then King Street, now State Street). The procession next turned down toward Oliver's Dock, where Andrew Oliver had recently built a brick office that was to serve, according to popular rumor, as the distribution center for stamps. (Some sources place this event at Oliver's Wharf in the South End.)

In less than thirty minutes, the crowd had pulled down the building. The timbers were saved, ironically "stamped," and carried off to the Oliver mansion at the foot of Fort Hill. A bonfire was made on the top of the hill, after which the boisterous crowd returned to the mansion, where they vandalized the house and property, including "Looking Glasses, Tea Geer, and other China," although the building's solid construction apparently prevented its being completely razed. Gov. Francis Bernard, in a letter to his superiors in London, estimated Oliver's cash losses at £ 1,000 sterling and property damage at £ 3,000. So virulent was the feeling against Oliver that some of the crowd declared they would kill him if they could find him; however, the family had been warned and were not at home. Hearing of these events, Thomas Hutchinson (then Lieutenant Governor) offered a reward of £ 300 for information about the riot's leaders and instigators, but none was forthcoming. Evidently, Andrew Oliver took the crowd's threats seriously, for he resigned his post as Stamp Officer.

Downfall

Andrew's resignation did not end popular indignation against the Olivers, however. In 1773-74, a controversy arose over the propriety of Provincial officials' (such as judges and governors) accepting supplementary salaries from the Crown, a practice considered by the Patriots on the Boston Committee of Correspondence and in the State House of Representatives to be a conflict of interest. Such officials were declared to have forfeited the right to hold office and four of the Superior Court Judges resigned in the face of the action of the Legislature. Chief Justice Oliver refused to resign, and the House, on the advice of John Adams as Chairman of the Committee of Correspondence, drew up articles of impeachment against him. Not surprisingly, Thomas Hutchinson, who had become Governor in 1771, declined to act against his brother-in-law. However, in April, 1774, a Worcester grand jury refused to serve under the Chief Justice; another in Suffolk County followed suit. The House then acted upon and passed the articles of impeachment.

Matters were made worse for the Olivers, if possible, by the publication of letters sent by the Chief Justice, Gov. Hutchinson, and others to friends in England. The letters, written some years earlier, had been shown to Benjamin Franklin, who sent them to a friend in the colonies. There they were published, without Franklin's knowledge, and an uproar immediately ensued. Although the views expressed were little if at all different from the writers' public pronouncements, they did contain statements critical of the colonists and advise the Crown to take stern measures against them. The atmosphere became so tense that the Chief Justice did not even dare to attend the funeral of his brother Andrew, who died on March 3, 1774.

Like Hutchinson, Peter Oliver remained intransigent to the end. When the British forces evacuated Boston in March of 1776, Peter Oliver and other family members were among the prominent Loyalists who left the colonies, never to return. Peter Oliver went first to Halifax, Nova Scotia, then to England, where he was cordially received. He was later awarded an honorary degree by Oxford University.

Not all the Olivers left with the British evacuation, however. Andrew (II) (1731-1799), son of Stamp Officer Andrew (I), lived on quietly in Salem as a gentleman scientist. He achieved a reputation for scholarship and benevolence, becoming a founder of the American Academy of Arts and Sciences.

Haymarket

In the years following the British evacuation, the history of Oliver's Dock becomes hard to follow. It is unclear who inherited Stamp Officer Andrew Oliver's property on the dock. A Thomas Oliver is listed in the Mass. Tax Valuation of 1771 as possessing 3,450 superficial feet wharf, but, aside from the fact that Andrew Oliver did not die until 1774, there is no indication as to whether the Thomas Oliver mentioned is 1) Andrew's son Thomas, born 1754, 2) Thomas Fitch Oliver, the son of Stamp Officer Andrew's son Andrew (II) (1731-1799), 3) a member of another branch of the family altogether, namely, the Brattle Olivers of Cambridge, or even 4) the owner of property at some other Boston location quite unconnected to Oliver's Dock, such as Oliver's Wharf in the South End.

Evidently, the town of Boston had control of at least a part of Oliver's Dock after the Revolution. Possibly some of the Oliver property was confiscated after their departure with the Loyalists. In any case, a town committee advised in 1783 that "a place be assigned for markets for wood, hay, etc." and the hay market was eventually situated on Oliver's Dock, together with the engine for weighing the hay. The hay market did not remain there long, however. In August of the same year, a fire broke out on the dock, in a barn belonging to a wharfinger named Crane, and spread to five other barns, a house and a store. Following this event, the hay-weighing machine was removed to a location on the Common near the schoolhouse.

A List of Merchants, Mechanics and Traders

Interestingly, some detailed information about the occupants of the dock property is provided by a reference work first published by John Norman at an address on the dock itself. The first Boston Directory appeared in 1789 and was advertised as "a list of merchants, mechanics, traders and others in the town of Boston." Eleven entries refer to occupants of properties on or near Oliver's Dock, and the accompanying descriptions provide a fascinating look at a thriving commercial location of the late eighteenth century. They were, in alphabetical order,

1) Jonathan Fowle, coachmaker.

2) Michael Homer, bricklayer and mason, who advertised "chimnies and cabusses for vessels, built at the shortest notice." A caboose, or cabuss, was a kitchen facility on shipboard, often made of brick for fire protection.

3) John Magner, smith/farrier.

4) James Matthew, sexton.

5) Nathaniel G. Moody, sail maker.

6) Carleton Osgood, teacher of "mathematicks." He taught at a school run by a Mrs. Pullings near Oliver's Dock and was accustomed to give lectures in coffee houses and other public forums.

7) Mrs. Rebecca Parrot, boarding-house proprietor. Like many women in this line of work, she is listed as a widow.

8) Edward Read, block maker. The blocks referred to would be of the type used in ship's rigging (pulleys).

9) Seth Webber and Thomas Page, ship's carpenters. Their shipyard was at the bottom of Milk Street, part of it being occupied by the Commercial Coffee House. Webber was also captain of the ship Sally Ann, which was in the Liverpool trade.

10) Job Wheelwright, cooper.

11) Robert Williams, shopkeeper.

There is no reason to think the listing was comprehensive, but even this small sample shows a strong bias toward occupations incidental to ships and seagoing commerce. The six occupants whose lines of work have no obvious connection with the sea indicate the continuing mixed residential/commercial use of the dockyard.

The history of Oliver's Dock, as such, was now drawing to its close. The reason was a simple one: a dock requires water, and the process of "wharfing out" had all but engulfed the property. In 1809, the town sold its rights in the Dock to William Phillips, and shortly thereafter the little remaining water area was filled in.

*

What the Timbers Told

Since no artifacts useful in dating were recovered in the course of the monitoring, the archaeologists had little means of determining when, in the approximately 130-year history of the Dock, these particular timbers had been laid down. Though the dockyard had suffered a series of fires, it seemed unlikely that the destruction included every single piece of wood above the water line, while the water-soaked pilings along the edges of the dock must certainly have been spared. For this reason, the surviving timbers could date from any period of the Dock's history, but which?

Archaeological Project Manager Michael Roberts decided to send wood samples to a New York State laboratory for possible tree-ring dating. In this procedure, a tree's growth rings (wide in good years, narrow in bad ones) can be matched with samples from wood of known ages from the same area. All the timbers came from northern white pines or white oaks. For a variety of resaons, most notably an absence of suitable comparative tree-ring sequences from nearby trees of the same age and species, it was not possible to derive firm dates for all three samples. One, however, had very probably been cut no earlier than 1745. The qualifying "no earlier" is used because wharf timbers are naturally subject to considerable abrasion and the possibility exists that some of the tree's outer rings had been rubbed away, making the date of its cutting later than might appear. The other two samples seemed to date from the same general time period, though no specific years could be assigned to them. Thus the probability is that these timbers were in place for some thirty years before the exciting events of the Revolution, which they undoubtedly witnessed.

Of considerable additional interest was the information about dock-building technology that could be gleaned from the timbers. Historic archaeologist Tim Kennedy examined the timbers' structure, shaping, and arrangement in detail. From a comparison with other reports of early dock remains, both American and European, he concluded that dock-building techniques remained remarkably stable over time. The methods used to build this portion of Oliver's Dock were very similar to those of medieval Europe. In particular, the notching of the timbers (in the form of struts, tiebacks, mortises, and tenons) was very reminiscent of that found in the thirteenth-century docks at Trig Lane, London. Like the new nation where it was situated, Oliver's Dock had a firm foundation in the traditions of the mother country.

REFERENCES CITED

A. Background History and Archaeology

Barfield, Thomas
1978 Phase II/III Archaeological Survey for the Proposed Arsenal Park. Institute for Conservation Archaeology. Ms. on file at MHC.

Beaudry, Mary C.
1984 Excavations at the Wilkinson Backlot Site, Boston, MA: A Preliminary Report. Occasional Paper #7. Center for Archaeological Studies, Boston University.

Boston Record Commissioners
n.d. Boston Town Records

Bower, Beth A., Claire Dempsey, Stephen Mrozowski, and Byron Rushing
1984 Long Wharf: Archaeological Testing of Parcel D-10. Massachusetts Historical Commission, Occasional Publications in Archaeology and History No. 3.

Bradley, James W., Neill DePaoli, Nancy Seasholes, Patricia McDowell, Gerald Kelso & Joanna Schoss
1983 Archaeology of the Bostonian Hotel Site. Massachusetts Historical Commission. Occasional Publications in Archaeology and History, No. 2.

Brayley, Aromir W.
1889 A Complete History of the Boston Fire Department. Boston, John P. Dale & Co.

City of Boston
1895 Annual Report of the Street Laying Out Department for the Year 1984. Boston: Rockwell & Churchill, City Publishers.

Fox, Pamela W. & Mikail Koch
1980 Central Business District Preservation Study. Part I: Building Information Forms. Boston Landmarks Commission, Vols. 2 and 3.

Hopkins, G. M.
1874 Atlas of the County of Suffolk, Mass. incl. Boston Proper. Vol. I, G. M. Hopkins & Co., Philadelphia.

Larson, Leslie
1981 The History and Evolution of Liberty Square: A Preliminary Report. Boston Redevelopment Authority.

Luedtke, Barbara
1975 Final Report on the Archaeological and Paleobotanical Resources of Twelve Islands in Boston Harbor. Ms. on file at MHC. MDC

Luedtke, Barbara
1980 The Calf Island Site of the Late Prehistoric Period in Boston Harbor. Man in the Northeast, Vol. 20:25-76.

Massachusetts Historical Commission
1979 Cultural Resources in Massachusetts: A Model for Management. Department of the State Secretary, Boston.

1979 Public Planning and Environmental Review: Archaeology & Historic Preservation. Revised edition. Department of the State Secretary, Boston.

1982 Historic and Archaeological Resources of the Boston Area. Department of the State Secretary, Boston.

Moir, Randy & C. C. Lamberg-Karlovsky
1978 Final Report, Phase I Archaeological Study for the Proposed Lechmere Reconstruction Project, Cambridge, MA. Institute for Conservation Archaeology, Peabody Museum, Harvard University.

Nash, Gary B.
1979 The Urban Crucible. Harvard University Press, Cambridge, MA.

Pendery, Steven R.
1982 Final Report, Phase 2, Archaeological Site Examination of the Project Area for the Central Artery North Area, Charlestown, MA for L. Berger, ICA, Harvard.

Roberts, Michael, editor
1979 Summary and Analysis of Cultural Resource Information on the Outer Continental Shelf from the Bay of Fundy to Cape Hatteras, in four volumes. Bureau of Land Management, Outer Continental Shelf Office, New York.

Rutman, Darrett B.
1965 Winthrop's Boston: A Portrait of a Puritan Town, 1630-1649. W. W. Norton & Co., Inc., New York.

Suffolk County
1630-Registry of Deeds.
1830

Thwing, Annie H.
1920 The Crooked and Narrow Streets of the Town of Boston, 1630-1822. Marshall Jones, Co., Boston.

Whitehill, Walter Muir
1959 Boston: A Topographical History. The Belknap Press of Harvard University Press, Cambridge, MA.

B. Intensive Archaeological Survey

Beaudry, Mary
1984 Excavations at the Wilkinson Backlot Site, Boston, Massachusetts: A Preliminary Report. Center for Archaeological Studies, Boston University, Occasional Paper No. 1.

Bower, Beth Anne, Claire Dempsey, Stephen Mrozowski, & Byron Rushing
1984 Long Wharf: Archaeological Testing of Parcel D. Massachusetts Historical Commission, Occasional Publications in Archaeology and History 3, Boston.

Bradley, James W., ed.
1983 Archaeology of the Bostonian Hotel Site. Massachusetts Historical Commission, Occasional Publications in Archaeology and History 2, Boston.

Brayley, Aromir W.
1889 A Complete History of the Boston Fire Department. John P. Dale & Co., Boston.

Dincauze, Dena F.
1974 An Introduction to Archaeology in the Greater Boston Area. Archaeology of Eastern North America 2(1):39-67.

1975 The Late Archaic Period in Southern New England. Artic Anthropology 12(2): 23-24.

Massachusetts Historical Commission (MHC)
1982 Historic and Archaeological Resources of the Boston Area: A Framework for Preservation Decisions. James W. Bradley, ed. Office of the Secretary of State, Boston.

Mrozowski, Stephen A.
1985 Boston's Archaeological Legacy: The City's Planning and Policy Document. Boston Landmarks Commission, Boston.

Rutman, Darrett B.
1965 Winthrop's Boston: A Portrait of a Puritan Town, 1630-1649. W. W. Norton & Co. Inc., New York.

Shurtleff, Nathaniel B.
1890 A Topographical and Historical Description of Boston (3rd edition). City Printers, Boston.

Suffolk County
1630-Registry of Deeds
1830

Whitehill, Walter Muir
1968 Boston, A Topographical History (2nd edition). Belknap Press of Harvard University Press, Cambridge, Massachusetts.

C. Archaeological Wharf Research

Bagley, James E.
n.d. A Short Story on Long, Lewis and Commercial Wharves, Atlantic Avenue, Boston, MA. Typescript at the Boston Atheneum, Boston, MA.

Balliet, Barbara
1983 The History of Telco Block in The Archaeological Investigation of the Telco Block, South Street Seaport Historical District, New York, NY by Diana Rockman, Wendy Harris, and Jed Levin, pp. 14-36. Report on file with the National Register of Historic Places, Washington, DC.

Barnhart, Clarence L.
1951 Thorndike-Barnhart Dictionary, Doubleday & Company, Inc., Garden City, NY.

Bower, Beth A., Claire Dempsey, Stephen Mrozowski, and Byron Rushing
1984 Long Wharf: Archaeological Testing of Parcel D-10. Occasional Publications in Archaeology and History No. 3, Massachusetts Historical Commission, Boston, MA.

Bradley, James, Neill DePaoli, Nancy Seasholes, Patricia McDowell, Gerald Kelso, and Johanna Schoss
1983 The Bostonian Hotel Site. Occasional Publications in Archaeology and History No. 2. Massachusetts Historical Commission, Boston, MA.

Brady, Mary Jane
1978 The Construction of Marine Structures in New England Prior to 1900. Master's Thesis on file, Division of Historic Preservation, School of Architecture, Columbia University, New York, NY.

Bray, Oscar
1940 Restoring Historic Wharf at Salem, Massachusetts, Civil Engineering, February, pp. 105-7.

Courtney, T.W.
n.d. Excavations at the Royal Dockyard, Woolwich 1972-1973.

Cushing, Samuel B.
1877 A Method of Constructing Bridge Piers and the Substructure of Wharves or other Harbor Works, E. L. Freeman, Central Falls, RI.

Faulkner, Alaric, Kim M. Peters, David P. Sell and Edwin D. Dethlefsen
1978 Port and Market: Archaeology of the Central Waterfront, Newburyport, Massachusetts. National Park Service, Interagency Archaeological Services, Atlanta, Georgia, or Newburyport Press.

Forbes, Frank H.
1915 "The Old Boston Waterfront", ed. William S. Rossiter, Days and Ways in Old Boston, R. H. Stearns and Co., Boston, Massachusetts.

Gallagher, Joan
1986 Historic Handbook for the Town Dock/Dry Dock Sites, Central Artery North Data Recovery Project, Charlestown, Massachusetts. The Public Archaeology Laboratory, Inc., Providence, Rhode Island.

Gallagher, Joan
1986 Historic Handbook for the Parker-Harris Pottery Site, Central Artery North Data Recovery Project, Charlestown, Massachusetts. The Public Archaeology Laboratory, Inc., Providence, Rhode Island.

Greene, Carleton
1917 Wharves and Piers: Their Design, Construction and Equipment, McGraw Hill Book Co., New York.

Geismar, Joan
1983 The Archaeological Investigation of the 175 Water Street Block, New York City. Report on file. Landmarks Preservation Commission, New York City.

Geismar, Joan
1987 Digging into Seaport's Past, Archaeology, Jan/Feb pp. 30-5.

Harrington, Faith
1981 The Follett Site Excavation. Project completion report submitted to the National Trust for Historic Preservation. On file, Strawbery Banke, Inc., Portsmouth, New Hampshire; or Jones House Archaeological Center, Strawbery Banke Museum, Portsmouth, NH.

1983 Strawbery Banke: A Historic Waterfront Neighborhood, Archaeology, 36 (3): 52-9.

1984 Portsmouth, New Hampshire: Evidence of Maritime Development. Paper delivered at the Society for Industrial Archaeology, Thirteenth Annual Conference, Boston, MA.

Heintzelman, Andrea
1983 Construction, Material and Design of Nineteenth Century and Earlier Wharves: An Urban Archaeological Concern. Paper presented at the Society for Historical Archaeology Conference, Denver, Colorado.

1984 Cheapside Dock: The Heart of Baltimore's Beginnings. Baltimore Center for Urban Archaeology, Baltimore, MD.

1986 Colonial Wharf Construction: Uncovering the Untold Past, The Log of Mystic Seaport, 37 (4): pp. 124-35.

Henn, Roselle E., Diana diZerega Wall, Laurie Boros, Valerie DeCarlo, and Jed Levin
1984 "The Standardization of Wharf Construction in Federalist New York City."

Huey, Paul
1984 Old Slip and Cruger's Wharf at New York: An Archaeological Perspective of the Colonial American Waterfront, Historical Archaeology, 18 (1):pp. 15-37.

Ingersoll, Daniel W., Jr.
1971 Settlement Archaeology at Puddle Dock. Unpublished doctoral dissertation, Harvard University, Cambridge, Massachusetts.

Johnson, Harry and Frederick Lightfoot
1980 Maritime New York in Nineteenth Century Photographs, Dover Publications, Inc., New York.

Kardas, Susan
1982 Late Eighteenth Century Landfilling Techniques at the Schermerhorn Row Block. Paper presented at the Council for Northeast Historical Archaeology Meeting, October 23, 1982.

Larrabee, Edward
1982 Constructing Cross Sections of Made Land at the Schermerhorn Row Block. Paper presented at the Council for Northeast Historical Archaeology Meeting, October 23, 1982.

Miller, Louise
1977a New Fresh Wharf: 2, The Saxon and Early Medieval Waterfronts, The London Archaeologist, 3 (2) pp. 47-53.

1977b Miles Lane: The Early Roman Waterfront, The The London Archaeologist, 4 (6) pp. 43-7.

Milne, Gustav and Brian Hobley
1981 Waterfront Archaeology in Britain and Northern Europe, Council for British Archaeology Research Report No. 41.

Milne, Gustav and Chrissie Milne
1978 Excavations on the Thames Waterfront at Trig Lane, London, 1974-6, Medieval Archaeology, XXII: pp. 84-104.

Parker, Helen
n.d. A Medieval Wharf in Thoresby College Courtyard, King's Lynn, Norfolk. University of Birmingham.

Payson, Gilbert R.
1928 Long Wharf and the Old Water Front History and Reminiscences, Proceedings of the Bostonian Society.

Prescott, George Watson
1890 Thirty Years at Long Wharf, Boston, Massachusetts.

Reitig, Polly M.
1976 Long Wharf and Custom House Block. National Register of Historic Places Nomination. Historic Sites survey, National Park Service.

Rockman, Diana
1982 An Archaeological Investigation of the Telco Block, New York: Interim Report on the Result of the Field Investigations. Unpublished ms., Soil Systems, Inc., Marietta, Georgia.

Schofield, John and Louise Miller
1976 New Fresh Wharf: 1, The Roman Waterfront, The London Archaeologist, 2 (15) pp. 390-5.

Shurtleff, Nathaniel B.
1871 A Topographical and Historical Description of Boston, A. Williams and Co., Boston, Massachusetts.

Small, Edwin W.
1970 Early Wharf Building. Salem: Eastern National Parks and Monument Association; or United States Department of the Interior. Original edition 1941.

Vernon-Harcourt, Leveson Francis
1885 Harbors and Docks, Clarendon Press, Oxford.

Vogel, J. C. and J. Karnfeld
n.d. A New Method for Dating Peat, South African Journal of Science, 76 (12) pp. 557-8.

Wall, Diana diZerega and Roselle E. Henn
1985 The Archaeological Investigation of the Assay Block. Paper presented at the Annual Meeting, Council for Northeast Historical Archaeology, Ottawa, Canada.

Weinraub, William C. L.
1975 Industrial, Commercial and Maritime Introduction to New Bedford, Massachusetts, 1760-1900. Unpublished Master's Thesis. Mystic Seaport, Inc., Mystic, CT.

Welch, Charles A.
1963 A Brief History of Long Wharf. Transcript, Peabody Museum, Salem, Massachusetts.

Wilson, Merrill Ann and Geoffrey P. Moran
1980 Historic Structure Report, Central Wharf: Architectural Data and Archaeological Data. National Park Service, Denver Service Center, Denver, Colorado.

Wilson, Merrill Ann and Mary Jane Brady
1982 Historical Structure Report, Derby Wharf: Architectural Data. National Park Service, Denver Service Center, Denver, Colorado.